UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MAPLEBEAR INC. D/B/A INSTACART
Petitioner,

v.

FALL LINE PATENTS, LLC,
Patent Owner.

Patent No. 9,454,748
Filing Date: October 22, 2010
Issue Date: September 27, 2016
Title: SYSTEM AND METHOD FOR DATA MANAGEMENT

Inter Partes Review No.: IPR2025-00958

PETITION FOR *INTER PARTES* REVIEW
UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.100 *et seq*.

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MANDATORY NOTICES

Real Parties in Interest (37 C.F.R. § 42.8(b)(1))

The real party-in-interest for this Petition is Maplebear Inc. d/b/a Instacart ("Instacart").

No unnamed entity is funding, controlling, or directing this Petition for *inter partes* review (IPR) of U.S. Patent No. 9,454,748 ("the '748 patent"), or otherwise has an opportunity to control or direct this Petition or Petitioner's participation in any resulting IPR.

Related Matters (37 C.F.R. § 42.8(b)(2))

The '748 patent was asserted against Sprouts Farmers Market, Inc. and SFM, LLC d/b/a SF Markets, LLC (collectively "Sprouts") and against ALDI Inc. and ALDI (Texas) L.L.C. (collectively "ALDI") by Fall Line Patents, LLC ("Fall Line") in the United States District Court for the Eastern District of Texas: *Fall Line Patents, LLC v. Sprouts Farmers Market, Inc.*, No. 5:24-cv-182 (E.D. Tex.) and *Fall Line Patents, LLC v. ALDI Inc.*, No. 5:24-cv-172 (E.D. Tex.) (collectively, "Texas District Court Litigations"). Ex. 1015; Ex. 1016; Ex. 1054. Sprouts and ALDI are customers of Petitioner Instacart. The earliest date of service of a complaint for the Texas District Court Litigations on any of Petitioner's customers was November 25, 2024. Petitioner Instacart is not a party to any of the Texas District Court Litigations.

Petitioner has filed a declaratory judgment of non-infringement action against Fall Line in the United States District Court for the Northern District Court of Oklahoma ("Petitioner's DJ Action"): *Maplebear, Inc., D/B/A Instacart v. Fall Line Patents, LLC*, No. 25-cv-00137-MTS (N.D. Okla.). Ex. 1014. The complaint in Petitioner's DJ Action was served on March 25, 2025.

According to the Office's records, the '748 patent is a continuation of Application No. 10/643,516, filed on Aug. 19, 2003, now U.S. Pat. No. 7,822,816 ("the '816 patent"), which claims priority to Provisional Application No. 60/404,491, filed on Aug. 19, 2002. Also, Application No. 15/260,929, filed on Sept. 9, 2016, now abandoned, claims priority to the '748 patent.

The '748 patent has been the subject of the following district court cases:

- *Fall Line Patents, LLC v. Grubhub Holdings, Inc. et al.*, 6-17-cv-00204 (E.D. Tex.), which was terminated.
- *Fall Line Patents, LLC v. Cinemark Holdings, Inc. et al.*, 6-17-cv-00203 (E.D. Tex.), which was terminated.
- *Fall Line Patents, LLC v. American Airlines Group, Inc. et al.*, 6-17-cv-00202 (E.D. Tex.), which was terminated.
- *Fall Line Patents, LLC v. Choice Hotels International, Inc.*, 6-17-cv-00407 (E.D. Tex.), which was terminated.

- *Fall Line Patents, LLC v. Uber Technologies, Inc.*, 6-17-cv-00408 (E.D. Tex.), which was terminated.
- *Fall Line Patents, LLC v. Zoe's Kitchen, Inc. et al.*, 6-18-cv-00407 (E.D. Tex.) ("Zoe's Kitchen case"), which was terminated. *See also* Ex. 1028.
- *Fall Line Patents, LLC v. Papa John's International, Inc. et al.*, 6-18-cv-00415 (E.D. Tex.), which was consolidated with the Zoe's Kitchen case and later terminated.
- *Fall Line Patents, LLC v. McDonald's Corporation et al.*, 6-18-cv-00412 (E.D. Tex.), which was consolidated with the Zoe's Kitchen case and later terminated.
- *Fall Line Patents, LLC v. Panda Restaurant Group, Inc. et al.*, 6-18-cv-00413 (E.D. Tex.), which was consolidated with the Zoe's Kitchen case and later terminated.
- *Fall Line Patents, LLC v. Starbucks Corporation*, 6-18-cv-00411 (E.D. Tex.), which was consolidated with the Zoe's Kitchen case.
- *Fall Line Patents, LLC v. Regal Cinemas, Inc.*, 6-18-cv-00410 (E.D. Tex.), which was terminated.

- *Fall Line Patents, LLC v. Boston Market Corporation*, 6-18-cv-00409 (E.D. Tex.), which was consolidated with the Zoe's Kitchen case and later terminated.
- *Fall Line Patents, LLC v. AMC Entertainment Holdings, Inc. et al.*, 6-18-cv-00408 (E.D. Tex.), which was consolidated with the Zoe's Kitchen case and later terminated.
- *Fall Line Patents, LLC v. Pizza Hut, LLC et al.*, 6-18-cv-00406 (E.D. Tex.), which was terminated.
- *Fall Line Patents, LLC v. Arby's Restaurant Group, Inc.*, 5:23-cv-00110 (E.D. Tex.) ("the 110 E.D. Tex. case"), which was terminated.
- *Fall Line Patents, LLC v. Whatabrands LLC et al.*, 5:23-cv-00121 (E.D. Tex.), which was consolidated with the 110 E.D. Tex. case and later terminated.
- *Fall Line Patents, LLC v. Subway IP LLC et al.*, 5:23-cv-00119 (E.D. Tex.), which was consolidated with the 110 E.D. Tex. case and later terminated.
- *Fall Line Patents, LLC v. Wendy's International, LLC et al.*, 5:23-cv-00120 (E.D. Tex.), which was consolidated with the 110 E.D. Tex. case and later terminated.

- *Fall Line Patents, LLC v. Sonic Franchising LLC et al.*, 5:23-cv-00118 (E.D. Tex.), which was consolidated with the 110 E.D. Tex. case and later terminated.
- *Fall Line Patents, LLC v. Popeye's Louisiana Kitchen, Inc.*, 5:23-cv-00117 (E.D. Tex.), which was consolidated with the 110 E.D. Tex. case and later terminated.
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- *Fall Line Patents, LLC v. Chick-fil-A, Inc.*, 5:23-cv-00112 (E.D. Tex.), which was consolidated with the 110 E.D. Tex. case and later terminated.
- *Fall Line Patents, LLC v. Burger King Company, LLC*, 5:23-cv-00111 (E.D. Tex.), which was consolidated with the 110 E.D. Tex. case and later terminated.
- *Fall Line Patents, LLC v. Wingstop Inc. et al.*, 5:24-cv-00089 (E.D. Tex.) ("the 089 E.D. Tex. case"), which is pending.
- *Fall Line Patents, LLC v. Krispy Kreme, Inc. et al.*, 5:24-cv-00095 (E.D. Tex.), which was consolidated with the 089 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. Raising Canes Restaurants, L.L.C. et al.*, 5:24-cv-00096 (E.D. Tex.), which was consolidated with the 089 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. El Pollo Loco, Inc. et al.*, 5:24-cv-00092 (E.D. Tex.), which was consolidated with the 089 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. Dine Brands Global, Inc. et al.*, 5:24-cv-00097 (E.D. Tex.), which was consolidated with the 089 E.D. Tex. case and later terminated.

- *Fall Line Patents, LLC v. Jack in the Box, Inc. et al.*, 5:24-cv-00093 (E.D. Tex.), which was consolidated with the 089 E.D. Tex. case and later terminated.
- *Fall Line Patents, LLC v. Jersey Mikes Franchise Systems, Inc. et al.*, 5:24-cv-00094 (E.D. Tex.), which was consolidated with the 089 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. Carl's Jr. Restaurants LLC et al.*, 5:24-cv-00090 (E.D. Tex.), which was consolidated with the 089 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. Domino's Pizza, Inc. et al.*, 5:24-cv-00091 (E.D. Tex.), which was consolidated with the 089 E.D. Tex. case and later terminated.
- *Fall Line Patents, LLC v. 7-Eleven, Inc.*, 5:24-cv-00167 (E.D. Tex.) ("the 167 E.D. Tex. case"), which is pending.
- *Fall Line Patents, LLC v. Enterprise Holdings, Inc. et al.*, 5:24-cv-00180 (E.D. Tex.), which was consolidated with the 167 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. Lowe's Companies, Inc. et al.*, 5:24-cv-00181 (E.D. Tex.), which was consolidated with the 167 E.D. Tex. case and is pending.

- *Fall Line Patents, LLC v. Sprouts Farmers Market, Inc. et al.*, 5:24-cv-00182 (E.D. Tex.), which was consolidated with the 167 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. DoorDash, Inc. et al.*, 5:24-cv-00179 (E.D. Tex.), which was consolidated with the 167 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. Darden Restaurants, Inc. et al.*, 5:24-cv-00178 (E.D. Tex.), which was consolidated with the 167 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. AutoZone, Inc.*, 5:24-cv-00173 (E.D. Tex.), which was consolidated with the 167 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. Best Buy Co., Inc. et al.*, 5:24-cv-00174 (E.D. Tex.), which was consolidated with the 167 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. Brookshire Grocery Company*, 5:24-cv-00175 (E.D. Tex.), which was consolidated with the 167 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. Chili's, Inc. et al.*, 5:24-cv-00176 (E.D. Tex.), which was consolidated with the 167 E.D. Tex. case and later terminated.

- *Fall Line Patents, LLC v. Cracker Barrel Old Country Store, Inc. et al.*, 5:24-cv-00177 (E.D. Tex.), which was consolidated with the 167 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. Academy, Ltd. et al.*, 5:24-cv-00169 (E.D. Tex.), which was consolidated with the 167 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. Advance Auto Parts, Inc. et al.*, 5:24-cv-00170 (E.D. Tex.), which was consolidated with the 167 E.D. Tex. case and is pending.
- *Fall Line Patents, LLC v. ALDI Inc. et al.*, 5:24-cv-00172 (E.D. Tex.), which was consolidated with the 167 E.D. Tex. case and is pending.

The ’748 patent has also been the subject of the following U.S. Patent Office proceedings. Petitioner was not involved in any of these matters:

- *Unified Patents Inc. v. Fall Line Patents, LLC*, IPR2018-00043, challenging claims of the ’748 patent on different grounds from those presented herein, which resulted in a final written decision finding claims 16-19, 21, and 22 unpatentable.
- *Uber Technologies, Inc. et al. v. Fall Line Patents, LLC*, IPR2018-00535, challenging claims of the ’748 patent on different grounds from

those presented herein, which was terminated prior to an institution decision due to settlement.

- *Starbucks Corporation et al v. Fall Line Patents, LLC*, IPR2019-00610, challenging claims of the '748 patent on different grounds from those presented herein, which resulted in a final written decision finding claims 1, 2, 5, and 19-22 unpatentable. On remand, a second final written decision found that claim 7 had not been shown unpatentable.

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 cancelled as a result of an *ex parte* reexamination proceeding (U.S. Serial No. 90/012,829). Ex. 1017. Additionally, claims 1-14 of the '816 patent were the subject of an *inter partes* review petition (IPR2014-00140), which the Board instituted. Thereafter, the Board terminated IPR2014-00140 upon cancellation of the challenged claims in the aforementioned *ex parte* reexamination.

Lead and Back-Up Counsel (37 C.F.R. § 42.8(b)(3))

Petitioner designates counsel listed below. A power of attorney for counsel is being concurrently filed.

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I. INTRODUCTION

Maplebear Inc. d/b/a/ Instacart ("Petitioner") petitions for *inter partes* review and cancellation of claims 3, 4 and 6-15 of U.S. Patent No. 9,454,748 ("the '748 patent") (Ex. 1001). The '748 patent relates to the collection and management of information, particularly data from questionnaires. As the prior art and past IPRs demonstrate, technologies for collecting information via online questionnaires and managing that information were well-known long before the '748 patent's priority date. Indeed, claims 1, 2, 5, and 16-22 of the '748 patent, as well as all claims in the parent patent subject to a terminal disclaimer with the '748 patent, have already been found unpatentable. Ex. 1017; Ex. 1020; Ex. 1022; Ex. 1023; *see also* Ex. 1021; Ex. 1052; Ex. 1053.

This IPR challenges the remaining claims of the '748 patent—claims 3, 4 and 6-15 ("the Challenged Claims"). The Challenged Claims merely repackage many of the same concepts recited in the already-cancelled claims and should fare no better. All Challenged Claims are obvious in view of art combinations that were neither applied nor considered against these particular limitations. For example, Barbosa and Falls teach that executable questionnaires, tokenized questionnaires, and synchronization of data and program code were all well-known in the prior art. Other secondary references relied on herein demonstrate the trivial nature of these and the other features recited in the Challenged Claims.

The Board should institute review and cancel the remaining claims of a patent that attempts to claim foundational, well-understood practices in mobile data collection, using routine techniques applied to conventional hardware.

II. THE '748 PATENT OVERVIEW

A. Summary

The '748 patent describes a method of automatically sending electronic forms to handheld computers via the Internet. Ex. 1001, Abstract, 10:28-36, Fig. 5. A client creates an electronic form via a web-based interface by entering questions and response types. *Id*., 8:40-53, 10:28-30, Figs. 2, 5. When creating the form, a server assigns tokens to each question or response. *Id*., 8:51-9:2. The completed form and associated tokens are sent to handheld devices so that device users may provide responses to the questions. *Id*., 8:25-30, 9:3-13, 9:29-57, 10:28-34, Figs. 2-3, 5. Responses are stored locally at the handheld device until the form is completed, and/or are transmitted immediately upon entry to a server for processing and storage. *Id*., 9:58-10:8.

If a connection to the server is unavailable, transmissions to the server are delayed. *Id*., 10:6-8. According to the '748 patent, handheld devices that are "tolerant of intermittent connections" are called "loosely networked" computer systems. *Id*., 7:59-8:2. The '748 patent describes that such systems store

information in the handheld devices when a connection to a server is unavailable and transmit it (synchronize) when the connection is restored. *Id*.

B. Priority

For purposes of this proceeding, the priority date is assumed to be the earliest claimed priority date on the face of the patent: August 19, 2002.

C. Prosecution History

The '748 patent's prosecution history includes a double-patenting rejection over the '816 patent[1] and §§ 102 and 103 rejections based on various references. Applicant amended the claims to recite a questionnaire comprising "device independent tokens." Ex. 1004, 416-428. The claims were also amended to require a question requesting "location identifying information" and that the remote computing device had a "GPS integral thereto." *Id*., 570-603. The Notice of Allowance stated that "the prior art singly or in combination does not teach the totality of the independent claims" and the claims "recite[] the use of a GPS integral thereto." *Id*., 607-619.

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[1] This rejection indicated that the '748 patent's claims were not patentably distinct from its now-canceled parent, and a Terminal Disclaimer was filed. Ex. 1004, 65-67, 248-249.

III. STATE OF THE ART

A. Technical Background

All technical aspects of the claims were well-known, including Global Position System (GPS) technology and location identification, computer-based questionnaires, device independent tokens, loosely-networked computer systems, data synchronization, and providing data over the Internet. Ex. 1002, ¶¶ 1-333.

B. Prior Art

The relied-upon prior art relates to electronic collection, processing, and transfer of information and therefore is analogous. Ex. 1002, ¶¶ 69-86.

Reference	Qualifications	Basis (pre-AIA)
Barbosa	Filed Sept. 17, 2001; Issued Nov. 1, 2005	§ 102(e)
Falls	Filed July 3, 1997; Issued Nov. 23, 1999	§ 102(b)
Heath	Filed Sept. 5, 1996; Issued Dec. 21, 1999	§ 102(b)
Short	Published June 2, 2000	§ 102(b)
Torrance	Filed Dec. 21, 2001; Published Aug. 8, 2002	§§ 102(e), 102(a)
Bandera	Filed Jan. 28, 1999; Issued Dec. 18, 2001	§§ 102(e), 102(a)
Pinera	Filed Oct. 19, 2000; Issued Jan. 30, 2007	§ 102(e)
Morris	Filed Oct. 5, 1998; Issued Oct. 1, 2002	§ 102(e)
Hamlin	Filed Mar. 2, 1998; Issued Nov. 5, 2002	§ 102(e)

IV. LEVEL OF ORDINARY SKILL

A person of ordinary skill in the art ("POSA") at the time of the alleged invention would have had at least a bachelor's degree in computer science, computer engineering, electrical engineering, or a similar discipline, and at least two years of working experience developing applications for mobile devices. Ex. 1002, ¶¶ 87-92.

V. IDENTIFICATION OF CHALLENGE

Petitioner requests review of claims 3, 4, and 6-15 on the following grounds.

Ground	Reference(s)	Basis	Claims Challenged
A	Barbosa in view of Falls	§ 103(a)	7
B	Barbosa in view of Falls and Heath	§ 103(a)	7
C	Barbosa in view of Falls and Short	§ 103(a)	7
D	Barbosa in view of Falls, Heath, and Short	§ 103(a)	7
E	Barbosa in view of Falls and Torrance	§ 103(a)	8
F	Barbosa in view of Falls, Heath, and Torrance	§ 103(a)	8
G	Barbosa in view of Falls, Short, and Torrance	§ 103(a)	8
H	Barbosa in view of Falls, Heath, Short, and Torrance	§ 103(a)	8
I	Barbosa	§ 103(a)	3, 4, 9-11, 13-15
J	Barbosa in view of Bandera	§ 103(a)	3, 4, 9-11, 13-15

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Q	Barbosa in view of Hamlin	§ 103(a)	3
R	Barbosa in view of Bandera and Hamlin	§ 103(a)	3

This petition is supported by the expert testimony of Dr. Henry Houh, who is at least a POSA, and Exhibits 1001-1057. Ex. 1002, ¶¶ 1-333; Ex. 1003.

VI. SOTERA STIPULATION

Pursuant to the USPTO's March 26, 2025 Memorandum regarding "Interim Processes for PTAB Workload Management" and the "FAQs for Interim Processes for PTAB Workload Management"[2], Petitioner does not address discretionary denial issues in this Petition. Petitioner reserves all rights to address any discretionary denial factors, whether raised or not raised by Patent Owner ("PO") or the Board.

[2] https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management.

Also in accordance with the above-referenced USPTO guidance, Petitioner stipulates not to pursue in district court (or the ITC) any ground raised or that could have been reasonably raised in the IPR. *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A).

VII. CLAIM CONSTRUCTION

The claims should be given their ordinary and customary meaning as understood by a POSA in light of the '748 patent specification and prosecution history. 37 C.F.R. § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005).

In IPR2018-00043 and IPR2019-00610, both of which challenged claims of the '748 patent, the Board construed "GPS integral thereto" to mean "Global Positioning System equipment integral thereto." Ex. 1019, 12-13; Ex. 1022, 14-16; *see also* Ex. 1027, 7; Ex. 1018.

In IPR2019-00610, the Board further construed the following terms:

- "Loosely networked" to mean "tolerant of intermittent network connections and tolerant of the type of network connection available." Ex. 1022, 17-18; *see also* Ex. 1027, 7.
- "Executable" to mean "of, pertaining to, or being a program file that can be run." Ex. 1024, 7. The parties agreed that Java and markup

languages (XML, HTML, JSON, etc.) are "executable" within this definition. *Id*.; *see also* Ex. 1027, 7.

- "Token" to mean "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. 1022, 16; *see also* Ex. 1019, 13-17.
- "Originating computer," "recipient computer," and "central computer" as encompassing a computer having the ability to perform functions associated with an originating computer, a recipient computer, and/or a central computer. Ex. 1022, 17; *see also* Ex. 1019, 17-18.

In the Zoe's Kitchen case, the district court additionally construed the following terms:

- "Questionnaire" to mean "a program or form that includes a question or statement, which calls for a response." Ex. 1027, 8.
- "Automatically transferring" to mean "transferring that is not initiated upon direction of the user." *Id.*, 16-18.

For this Petition, Applicant adopts these constructions. All other terms have been given their plain and ordinary meaning. Ex. 1002, ¶¶ 93-104.

VIII. SPECIFIC GROUNDS FOR UNPATENTABILITY

Petitioner challenges the remaining claims of the '748 patent. In particular, Petitioner challenges claims 7 and 8 based on various combinations of Barbosa, Falls, Heath, Torrance and Short, and claims 3, 4, 6, and 9-15 based on one or more of Barbosa, Bandera, Heath, Pinera, Morris, and Hamlin.

A. Ground A: Barbosa-Falls Renders Obvious Claim 7

1. Independent Claim 7

Barbosa teaches most of claim 7. Indeed, in IPR2019-00610 ("the Starbucks IPR"), the Board explicitly found that, for claim 7, "Barbosa discloses an executable questionnaire, transfer of an executable questionnaire, and data synchronization." Ex. 1024, 8-11. Building on Barbosa, Falls works in combination to render obvious claim 7 by teaching a "loosely networked" architecture that is able to handle intermittently-connected devices. Thus, as explained below, Barbosa-Falls renders obvious claim 7.

a. A POSA Would Have Been Motivated to Combine Barbosa With Falls

Claim 7 recites a "*loose network*" and "*loosely networked computer*." Barbosa teaches a questionnaire program provided over a wireless network (e.g., GSM, CDMA) in a client-server system. Ex. 1005, Abstract, 3:20-58, 5:14-6:39, 6:58-8:22, FIGS. 1-6; *see id.*, 1:20-3:5.

If PO argues Barbosa does not explicitly disclose using loose networks or loosely-networked devices and synchronizing such devices, modifying Barbosa to use such networks, devices and associated synchronization would have been obvious based on Falls. Falls teaches a network-based application system in which devices are intermittently connected to a wireless network, and is in the same field as Barbosa: network-connected mobile computers using applications to communicate data over wireless networks (e.g., radio-based). Ex. 1002, ¶¶ 107-120; Ex. 1006, Abstract, 1:35-44, 3:16-35, 7:16-21, 16:35-37, 37:9-32. For example, Falls discloses mobile clients that wirelessly connect to other computers (e.g., servers) through a network, and execute programs. Ex. 1006, 1:11-19, 1:30-52, 3:16-35, 6:52-7:15, 8:53-55, 13:60-65, 37:19-32, Figs. 1, 2. Likewise, Barbosa discloses that a user's handheld device may have wireless capabilities to connect and synchronize to a network. Ex. 1005, 7:22-40, 8:4-10, Fig. 6. Barbosa's handheld devices receive, from an originating computer, "a set of instructions in a code module" that implement the invention and/or "templates (e.g., task/punch lists) and/or programs." *Id.*, 6:1-2, 7:26-27.

A POSA would have found it obvious to modify Barbosa such that its questionnaire system would also be accessed and used by intermittently-connected devices over a loose network. Ex. 1002, ¶¶ 113-120. This modification would broaden the reach and accessibility of Barbosa's services, and represents the mere

combination of prior art elements according to known methods to yield predictable results. *Id.* Barbosa and Falls each teach prior art mobile devices and Falls teaches intermittently-connected networks. Ex. 1005, 7:21-39, 8:4-10, Fig. 6; Ex. 1006, 1:11-19, 1:30-52, 3:16-35, 6:52-7:15, 8:53-55, 13:60-65, 37:19-32, Figs. 1, 2. And as noted above, Falls discloses a known method for managing intermittently-connected devices. For example, Falls teaches wireless devices that intermittently connect and disconnect from a network (i.e., the claimed "*loose network*"). *Id.*, Abstract, 3:16-35, 7:16-21, 16:35-37, 37:9-32. To address that intermittent connectivity, devices synchronize upon reconnection to the network after being disconnected. *Id*. Falls's synchronization process ensures the predictable result that network communications with the intermittently-connected devices do not fail due to intermittent disconnections. *Id.*, Abstract, 3:16-35, 7:16-21, 16:35-37, 37:9-32. Thus, combining the teachings of Barbosa and Falls to allow, for example, a mobile computer (e.g., Barbosa's PDA) that is intermittently-connected through a network to use Barbosa's questionnaire system by applying Falls's synchronization techniques would have been obvious and within the ordinary knowledge and creativity of a POSA. Ex. 1002, ¶¶ 115-118. Additionally, a POSA would have appreciated that combining the teachings of Barbosa and Falls would result in Barbosa's questionnaire system being more reliable (e.g., in case of inadvertent

disconnection or communication failure of Barbosa's handheld device) and more widely accessible. *Id.*

Modifying Barbosa as discussed would also have been the use of a known technique to improve similar systems in the same way. Barbosa and Falls teach similar network-based application systems. *Id.*, ¶¶ 119-120. Barbosa and Falls also teach data synchronization through computer networks. *Id*. It would have been obvious to a POSA to use Barbosa's devices in loose networks and synchronize those devices (as taught by Falls) to improve the reach and accessibility of Barbosa's interactive question and answer programs. *Id.*

This modification would have been well-within a POSA's skillset. In particular, a POSA would have had the knowledge and expertise to configure network communication protocols and modify programming of the interactive question and answer client/server system to accommodate intermittently-connected networks and devices. Ex. 1002, ¶ 120.

As explained below, the Barbosa-Falls combination renders obvious claim 7.

b. [7pre]: "A method for collecting survey data from a user and making responses available via the Internet, comprising:"

To the extent the preamble is limiting, Barbosa teaches or renders it obvious. Ex. 1002, ¶ 121. Barbosa provides "[a]n interactive question and answer session" which teaches collecting survey data from a user. Ex. 1005, 6:58-7:21, 7:39-61,

9:36-49, 12:45-13:5, Figs. 6, 7 (steps 709, 710); Ex. 1002, ¶ 121. Barbosa also teaches or renders obvious making responses available via the Internet as discussed for [7f]. Section VIII.A.1.h.

c. [7a]: "(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;"

Barbosa discloses "*designing a questionnaire . . . on a first computer platform*." Ex. 1002, ¶¶ 122-124. Barbosa's remote management system 58 (claimed "*first computing platform*") creates "a set of instructions in a code module" and/or "templates (e.g., task/punch lists) and/or programs" to be provided to a handheld device 10. Ex. 1005, 5:52-6:27, 7:22-39, Fig. 6. The downloaded code modules, templates, and/or programs include custom-designed executable questionnaires. Ex. 1002, ¶¶ 123-124; Ex. 1005, 8:49-10:31. For example, Barbosa discloses that "[c]omputer program code for carrying out operations of the present invention can be written in an object-oriented programming language such as Java." Ex. 1005, 12:45-51, 6:40-61. The "programs operated by the microprocessor ask questions or provide guidance related to a particular field problem." *Id.*, 6:58-7:21; *see also id.*, 7:40-8:3, 9:50-10:31. Accordingly, creating the programs (e.g., developing computer-executable code) for the questionnaire application on the remote management system 58 teaches "*designing a questionnaire ... on a first*

computer platform." Ex. 1002, ¶¶ 123-124; Ex. 1024, 8-9 ("Barbosa teaches an executable questionnaire"); Ex. 1023, 39-40 (Barbosa teaches or suggests claim 1, which recites "creating a questionnaire comprising a series of questions customized for a location.").

Barbosa also discloses its questionnaire "*having branching logic*." Ex. 1002, ¶¶ 125-126. For example, Barbosa describes an "appraisal program" in which "only the most relevant questions and/or interaction [should] be invoked by the program." Ex. 1005, 8:49-9:14. In an example construction application, Barbosa explains that "[t]he program may start by asking for the identification of [] the client or matter 703," and subsequently ask for "the problem or type of assessment 704." *Id.*, 7:40-8:3, 8:49-9:14. Based on the responses (e.g., the "identified subject matter 705"), the program would then ask specific questions related to the responses. *Id.,* 8:49-9:14. Asking specific and different questions based on responses to previous questions teaches branching logic between questions. Ex. 1002, ¶¶ 125-126.

Barbosa also discloses questions requesting location-identifying information. *Id.*, ¶ 130. For example, Barbosa describes that "*the assessor may be asked* (e.g., prompted) to identify the job 801 (e.g., *location*, customer name, date, type of job)." Ex. 1005, 9:50-10:31 (emphasis added). Barbosa further discloses that location information can be provided using GPS. *Id.*, 7:40-8:3, 9:50-10:31, 11:63-12:32. Additionally, since Barbosa describes one of the initial question responses including

location information, and that further questions are specified by the initial question responses, Barbosa teaches the claimed "*questionnaire customized for a particular location . . . wherein at least one of said at least one questions requests location identifying information*." *Id.*, 8:49-9:14, 7:40-8:3, 9:50-10:31; Ex. 1002, ¶¶ 127-130.

Further, Barbosa teaches that its questionnaire system may be used for an "environmental catastrophe," such that users are "assigned/deployed to specific positions." Ex. 1005, 12:1-3. At those positions, "assessor[s] are provide[d] a template from the remote server 1302 comprising unique/updated instructions for their respective assessment of the position." *Id.*, 12:11-14. Providing location-unique prompts and assessments also teaches a questionnaire "*customized for a particular location*." Ex. 1002, ¶¶ 127-130. Indeed, in the Starbucks IPR, the Board found that Barbosa and Barbosa-Bandera each teaches or renders obvious "a questionnaire comprising a series of questions *customized for a location*," as recited in claim 1, step (a). Ex. 1023, 37-45 (emphasis added).

If PO argues that Barbosa does not disclose a location-customized questionnaire, this would have been obvious based on Barbosa's teachings. *Id.*, ¶¶ 128-129. For example, such a modification would have been the mere application of a known technique to improve a known product ready for improvement. *Id.* The known product was Barbosa's questionnaire that requests location data and the

known technique was Barbosa's customization of questionnaires (e.g., for different industries/purposes). Ex. 1005, 9:50-12:32, Figs. 8-13. A POSA would have found that applying Barbosa's teaching of customization to particular locations would improve questionnaire relevance. Ex. 1002, ¶¶ 128-129. A POSA would also have found the results of programming different questionnaires for different locations to be predictable. *Id.*, ¶ 129.

Accordingly, Barbosa (and Barbosa-Falls) teaches or renders obvious [7a]. *Id.*, ¶ 131.

d. [7b]: "(b) automatically transferring said designed questionnaire to at least one loosely networked computer having a GPS integral thereto;"

Barbosa-Falls renders obvious [7b]. Ex. 1002, ¶¶ 132-150. Barbosa discloses establishing communications between a handheld computing device 10 and a remote server. Ex. 1005, 5:14-51. Barbosa's device 10 has integrated GPS. *Id.*, 6:40-57, 7:40-8:3, 9:50-10:31, 11:63-12:32, Fig. 5 (GPS position module 46). In Barbosa-Falls, Barbosa's device 10 also is "*loosely networked.*" *See* Section VIII.A.1.a; Ex. 1002, ¶ 133.

The remote server can provide "a set of instructions in a code module," i.e., programs, wirelessly to device 10. Ex. 1005, 5:52-6:27 (wireless module 42), 7:22-40, Fig. 6; Ex. 1002, ¶ 134. As noted for [7a], the downloadable instructions and code include the questionnaire. Ex. 1005, 6:58-7:22; *see id.*, 7:40-8:3, 9:50-10:31;

Ex. 1002, ¶¶ 134-135. Accordingly, Barbosa discloses "*transferring said designed questionnaire to at least one loosely networked computer*." Ex. 1002, ¶¶ 134-135, 138-142.

The Board previously held that the transferred questionnaire of [7b] must be "executable," which includes "a program file that can be run" such as "Java and markup languages (XML, HTML, JSON, etc.)." Ex. 1024, 7-8; *see also* Sections VII, VIII.A.1.f. The Board also recognized that Barbosa teaches or renders obvious executable questionnaires. Ex. 1024, 8-11.

The Board was correct: Barbosa discloses that its questionnaire application may be provided "[by] execut[ing] a[n] industry-specific program on the handheld device 10 related to the problem being addressed." Ex. 1005, 7:40-8:3. The questionnaire application may be transmitted from the server to a user's handheld device over a network. *Id.*, 11:63-12:32. Additionally, Barbosa's questionnaire application may be composed using object-oriented programming languages including JAVA. *Id.*, 12:45-13:5, 5:52-6:27, 7:22-39. A POSA would have understood that Barbosa's JAVA-based questionnaire configured to be executed on the handheld device, for instance, teaches an executable program. Ex. 1002, ¶¶ 136-137.

As to whether the questionnaire is transferred "*automatically*," Barbosa describes automatic data transfer using synchronization techniques and facilitating

real-time access to remote programs. Ex. 1005, Abstract, 3:29-43, 5:52-6:39, 6:58-7:21, Fig. 6; Ex. 1002, ¶ 143. Barbosa explains that "[f]ield assessment data synchronization and/or delivery is enabled using wireless capabilities resident in handheld personal computing devices" and that such wireless communication may use cellular telecommunications. Ex. 1005, Abstract, 3:29-43, 5:52-6:39, 6:58-7:21, Fig. 6. Synchronization involves the automatic transfer of data so as to align multiple devices with the most up-to-date data, i.e., transfer of data that is not initiated upon the user's direction. Ex. 1002, ¶ 144; Section VII (prior district court claim construction of "automatically transferring"). If PO argues that Barbosa does not explicitly disclose the recited "*automatically*" transferring the questionnaire, such a process would have been obvious in view of Barbosa's teachings of data synchronization, pursuant to which data (which would obviously include the executable questionnaire) is automatically transferred. *Id.*, ¶¶ 143-144. This also would be obvious in view of Falls's teachings of automatic network synchronization. *Id.*, ¶ 145

Falls describes automatic synchronization between computers in an intermittently-connected network. Ex. 1006, 16:35-43, 37:9-32; Ex. 1002, ¶ 145. For example, Falls explains that "upon reconnection of the mobile computer to the network, the invention synchronizes operations performed on the mobile computer during the disconnected interval with operations performed on the network during

that interval," and the operations are used in connection with "distributed software applications." Ex. 1006, 3:26-35, 7: 51-8:9; *see also id*., 5:20-31, 37:9-32; Ex. 1002, ¶ 145. Synchronization is "substantially automatic" and has the benefit of minimizing user intervention. Ex. 1006, 3:26-35; Ex. 1002, ¶ 145.

It would have been obvious to modify Barbosa's process of transferring an executable questionnaire through a network in view of either Barbosa's automatic data synchronization features or Falls's automatic software application synchronization, to predictably and beneficially result in a system that automatically transfers the executable questionnaire. Ex. 1002, ¶¶ 146-149. In either instance, making the transfer of Barbosa's questionnaire automatic would have been the mere application of a known technique (Barbosa's or Falls's automated synchronization techniques that provide automatic transfers) to known methods (Barbosa-Falls's transmission of customized executable questionnaire through an intermittently-connected network) to yield predictable results (automatic synchronization and transfer of a customized executable questionnaire). *Id.* It also represents the use of a known technique to improve similar processes in the same way. *Id.*

A POSA would have recognized that synchronization of an executable application or program would have been substantially similar to the synchronization of data in Barbosa and that the substantially the same benefits would apply. Ex. 1002, ¶ 148. And, as discussed above, Falls teaches that, in an intermittently-

connected network, devices often disconnect and reconnect. In Barbosa-Falls, intermittently-connected devices access (download or otherwise receive) the interactive questionnaire program. Accordingly, it likewise would have been beneficial (i.e., an improvement) to have applied Falls's automatic synchronization technique in the Barbosa-Falls combination so that both data and programs were automatically transferred upon a device's reconnection to the network (i.e., transfer that is not initiated upon the user's direction). *Id*. This technique would have beneficially allowed Barbosa's remote server to automatically provide an updated questionnaire program to a handheld device at a job site upon the device reconnecting to the network, if the handheld device inadvertently disconnected, without requiring user initiation. *Id*. Falls explains the importance of synchronization in mobile communications. Ex. 1006, 2:56-59, 3:16-25. A POSA would thus have recognized the benefit of synchronizing the questionnaire program in Barbosa-Falls. Ex. 1002, ¶ 148.

A POSA would have had a reasonable expectation of success in implementing the proposed combination to achieve the predictable results of a synchronized executable questionnaire. *Id.*, ¶ 149. Applying well-known synchronization techniques (as taught by Barbosa or Falls) to Barbosa's executable questionnaire would have been well within the skillset of a POSA. *Id.*

Accordingly, Barbosa-Falls teaches or renders obvious [7b]. *Id.*, ¶ 150.

e. [7c]: "(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-Falls teaches executing the transferred questionnaire on handheld device 10 at the requested location. Ex. 1002, ¶¶ 152-153. As explained for [7b], Barbosa-Falls teaches the claimed "*said loosely networked computer*." And as explained for [7a], Barbosa's questionnaire (used in Barbosa-Falls) is customized for a particular location. Ex. 1005, 8:49-9:14; Section VIII.A.1.c. Barbosa-Falls also discloses the claimed "*executing said transferred questionnaire on said loosely networked computer, thereby collecting responses from the user*." Ex. 1002, ¶¶ 152-153. Barbosa explains that its questionnaire program may be activated once a user is at a particular location, *e.g.*, a job site, and that the questionnaire requests that location. Ex. 1005, 8:49-9:14, 9:50-10:31, 12:2-14.

Barbosa further teaches that execution of the interactive questionnaire program (*e.g.*, appraisal program 702) includes collecting responses from a user. *Id.*, 7:40-8:3, 8:49-9:14; Ex. 1002, ¶ 153.

Accordingly, Barbosa-Falls teaches or renders obvious [7c]. Ex. 1002, ¶¶ 151-154.

f. [7d]: "(d) while said transferred questionnaire is executing, using said GPS to automatically provide said location identifying information as a response to said executing questionnaire;"

As explained for [7a], Barbosa's questionnaire includes at least one question requesting location-identifying information. Ex. 1005, 9:50-10:31; Section VIII.A.1.c. In Barbosa, that location identifying information can be provided using coordinates obtained automatically using the device's GPS position module 46. Ex. 1005, 7:40-8:3, 9:50-10:31, 12:26-32. Thus, Barbosa teaches that, while its questionnaire is executing, the GPS in device 10 automatically provides location-identifying information as a response to at least one question. Ex. 1002, ¶ 156; *see* Ex. 1023, 28-33 (finding that Barbosa teaches "using said GPS to automatically obtain location identifying information" recited in claim 19), 36 (addressing similar recitation in claim 21), 39-40 (finding that Barbosa teaches or suggests similar elements 1(e) and 1(f)).

Accordingly, Barbosa (and Barbosa-Falls) teaches or renders obvious [7d]. Ex. 1002, ¶¶ 155-157.

g. [7e]: "(e) automatically transferring via the loose network any responses so collected in real time to a central computer;"

Consistent with the '748 patent specification, the term "real time" in [7e] modifies the automatic transfer of the responses to the central computer. Ex. 1001, 4:40-45, 5:3-14, 7:59-65, Claim 1(g); *see also id.*, 4:10-17. Barbosa teaches such

real-time transmission of user response data. Ex. 1005, 7:54-58, 8:13-20, 8:54-65, 9:3-14, 9:50-10:30, Fig. 7; *see also id.*, 5:52-6:27 (describing "real-time access to servers and personnel in support of assessments"), Claims 15, 25; *see* Ex. 1023, 40 (finding that Barbosa teaches or suggests all limitations of claim 1, including the substantially similar limitation of "transmitting at least a portion of said response from the user to a server in real time via a network"). But if the term "real time" in [7e] is found to modify "collected" such that the collection of responses at the device must be in real-time, Barbosa also discloses and/or renders obvious such features.

Barbosa discloses that the "handheld data management device for field assessments can include a memory for storing field assessment programs and related data." Ex. 1005, 3:44-58, 8:4-10. Responses to questions are "automatically compile[d]" and "provided [] to a remote processor 709 via a network where the data will be analyzed," and the data analysis includes "[r]ealtime analysis." *Id.*, 9:3-14, 7:52-56, 8:11-22, 8:54-65, 9:50-10:30, Fig. 7; *see id.*, 5:52-6:27, Claims 15, 25. Accordingly, Barbosa teaches collecting user responses in real-time because the field assessment program collects user responses as they are inputted (they are automatically compiled). Ex. 1002, ¶¶ 158-159.

Barbosa also teaches automatically *transferring* user responses to a server *in real-time* by describing automatically collecting user responses and providing real-time analysis and feedback to a user who may need further guidance or assistance

while on-site. Ex. 1005, 7:54-58, 9:3-49, Claims 15, 25; Ex. 1002, ¶ 160; *see* Ex. 1023, 40 (finding Barbosa teaches or suggests "transmitting at least a portion of said response from the user to a server in real time via a network"). Barbosa's real-time feedback and guidance teaches real-time transfer of the user responses. Ex. 1002, ¶ 160. Indeed, Barbosa's description of automatically compiling responses, and sending user responses to a remote server for real-time analysis, guidance, and information is consistent with how the '748 patent describes automatically transmitting responses in real-time. Ex. 1001, 6:37-49, 10:28-36; Ex. 1002, ¶ 160. This description is also consistent with the claim construction of "transferring that is not initiated upon direction of the user." Section VII.

If PO argues that Barbosa fails to disclose the claimed "automatic" transfer of responses, such automatic transfer would have been obvious based on Barbosa's teachings of automatic data compilation and real-time data analysis. Ex. 1002, ¶ 161. For example, a POSA would have found it obvious to automatically transfer user responses (i.e., transfer of user responses that is not initiated upon direction of the user) to the server in order to obtain real-time analysis and feedback for those responses. *Id*. Indeed, this would have been the combination of prior art elements (Barbosa's teaching of automatic data compilation and transferring of user response data to a server) according to known methods (programming the transmission of data to be automatic) to yield predictable results (automatic transmission of user response

data similar to Barbosa's automatic compilation of user responses). Ex. 1005, 3:37-43, 6:21-27, 7:40-66, 9:3-14, 12:18-26; Ex. 1002, ¶ 161. It would have been obvious to a POSA that, in Barbosa (and Barbosa-Falls), providing automatic real-time transmission of user responses would facilitate real-time feedback, which is expressly taught in Barbosa. Ex. 1005, 9:15-49, Claims 15, 25. A POSA would have recognized that automatic real-time transmission of responses in Barbosa and Barbosa-Falls would equip assessors and others with immediately-relevant feedback or guidance, resulting in faster and more efficient task performance. Ex. 1002, ¶¶ 161-163.

Additionally, modifying Barbosa in view of Falls's teachings to include automatic transfer of user response data would also have been the application of a known technique (e.g., Falls's description of automatic transfer of data) to a known method ready for improvement (e.g., Barbosa's process for providing real-time feedback) to yield predictable results. Ex. 1006, 3:16-35, 16:35-43, 37:9-32; Ex. 1005, 6:21-27, 7:54-58, 8:13-20, 8:54-65, 9:3-14, 9:50-10:30, Fig. 7, Claims 15, 25; Ex. 1002, ¶ 162. The predictable result would have been devices in Barbosa-Falls automatically transferring user responses and receiving real-time feedback in return. Ex. 1002, ¶ 162. Modifying Barbosa in such a way would have been within the skillset of a POSA. *Id*.

Accordingly, Barbosa and Barbosa-Falls each teaches or renders obvious [7e]. *Id.*, ¶ 164.

h. [7f]: "(f) making available via the Internet any responses transferred to said central computer in step (e)."

The Board previously found that [7f] "requires, making available over the Internet, any responses that are (i) collected in real time while the transferred questionnaire is executing [and] (ii) transferred to the central computer" and that "Barbosa has disclosures that collectively might suggest or render obvious this limitation." Ex. 1024, 33. Barbosa teaches and renders obvious [7f].

Responses to Barbosa's interactive questionnaire are received by a server and subsequently made available to other users. For example, Barbosa explains that transmission of responses to a server provides "[t]he ability to manage data from several investigators . . . wherein comprehensive data from different sources may be analyzed, updated and reformatted for representation and *distribution to plural case workers*." Ex. 1005, 11:41-62 (emphasis added). This teaches "*making available . . . any responses transferred to said central computer in step (e)*." Ex. 1002, ¶¶ 165-167.

Barbosa also discloses transferring data via the Internet using HTTP, TCP/IP and/or FTP. Ex. 1005, 7:12-22, 7:41-63, 9:45-49, 12:54-58, 14:47-48, Figs. 6, 7 (steps 709, 710); Ex. 1002, ¶ 168. A POSA would have understood that these

protocols are Internet communication protocols and that Barbosa thus teaches communication over the Internet. Ex. 1002, ¶ 168. Accordingly, Barbosa teaches making user responses collected in real-time while the transferred questionnaire is executing available via the Internet. Ex. 1005, 7:12-22, 7:41-63, 9:45-49, 12:54-58, 14:47-48, Figs. 6, 7 (steps 709, 710); Ex. 1002, ¶ 168.

If PO argues that Barbosa does not explicitly describe making user responses available *via the Internet*, doing so would have been obvious based on Barbosa's teachings. Barbosa teaches distributing user responses (e.g., assessment data) to other users (e.g., plural case workers). Barbosa also teaches data transmission via HTTP, TCP/IP and FTP. Distributing user responses using these Internet protocols would have been obvious as the use of a known technique (communication via the Internet) to improve similar processes (communication of responses) in the same way (the responses are made available via the Internet). Ex. 1002, ¶ 169. User response distribution from the server through the Internet would have improved the accessibility and compatibility of the system. *Id.* The benefits and improvements would have been no different than for using the Internet to communicate from the user devices to the server, as Barbosa already teaches. Ex. 1005, 7:41-63, Fig. 6; Ex. 1002, ¶ 169.

Accordingly, Barbosa, and thus, Barbosa-Falls, teaches or renders obvious [7f]. Ex. 1002, ¶¶ 165-170.

For the foregoing reasons, Barbosa-Falls renders obvious claim 7. *Id.*, ¶ 170.

B. Ground B: Barbosa-Falls-Heath Renders Obvious Claim 7

If PO argues that Barbosa-Falls does not render obvious the *automatic* transfer of an executable questionnaire ([7b]), Barbosa-Falls-Heath does. Heath explains that it was well-known to automatically update and synchronize programs over a network. As discussed in detail below, Barbosa-Falls-Heath renders obvious claim 7.

1. Barbosa-Falls and Barbosa-Falls-Heath each teaches [7a] and [7c]-[7f]

As explained in Ground A, Barbosa-Falls renders each of [7a] and [7c]-[7f] obvious. *See* Sections VIII.A.1.a-c, VIII.A.1.e-h. This analysis does not change with the addition of Heath's teachings with respect to [7b]. Ex. 1002, ¶¶ 171-173.

2. Barbosa-Falls-Heath renders obvious [7b]

If PO argues that Barbosa and Barbosa-Falls fail to teach synchronizing and thus automatically transferring the interactive questionnaire, this would have been obvious in view of Heath. Heath teaches dynamically and automatically upgrading programs so that clients have the latest versions. Ex. 1007, 1:15-27, 1:41-55, 2:52-55. Such automatic updating has many benefits, including keeping the application on the client device in the most current form, enhancing security and protection from file corruption, and improving efficiency for maintaining and supporting dynamic applications. *Id.*, 1:1-27, 1:34-2:14, 4:28-58, 7:5-8:13, Claims 19, 55, 67. Heath

uses temporal or event-based triggers to automatically transfer updated application code from a server (i.e., transfer that is not initiated upon direction of a user). *Id.*, 1:34-2:61, 4:59-5:67, 6:1-38, 7:33-8:13, Figs. 3A, 6A, 6B.

It would have been obvious to modify Barbosa (and Barbosa-Falls) in view of Heath such that Barbosa's interactive questionnaire program (claimed "*executable questionnaire*") was automatically updated. Ex. 1002, ¶¶ 174-178. For example, when new questions, form logic, and/or other functions are added or modified in Barbosa's interactive questionnaire, a POSA would have found it obvious and beneficial to automatically update the application on the client devices per Heath. *Id*.

Barbosa-Falls-Heath would have resulted in the executable questionnaire of Barbosa (as used in Barbosa-Falls) being automatically updated, as taught in Heath, with loosely-networked devices, as taught in Falls. This combination represents the mere use of a known technique to improve similar devices and systems in the same way. The similar devices and systems are Barbosa's (and Barbosa-Falls's) network-based application for providing an interactive questionnaire and Heath's network-oriented applications. Ex. 1005, 6:58-7:22; Ex. 1007, Abstract. For example, both Barbosa's applications and Heath's applications are configured to be transmitted through an open network and to communicate information to and from a user device. Ex. 1005, 6:58-7:40; Ex. 1007, Abstract, 1:56-2:14. The known technique is

automatically updating such programs including the automatic transfer of executable program elements (e.g., code, modules, etc.) from a server to a client device. Ex. 1007, Abstract, 1:56-2:14; Ex. 1002, ¶¶ 179-180. The benefits of this automatic updating described above apply to Barbosa-Falls's questionnaire as they do in Heath. Ex. 1002, ¶ 181. Accordingly, a POSA would have been motivated to modify the network-based interactive questionnaire so that it is automatically updated to obtain those benefits. *Id*.

The combination also represents the application of a known technique (Heath's automatic updating) to a known system and process ready for improvement (Barbosa-Falls's questionnaire provided to the user device) to yield predictable results (the questionnaire is beneficially automatically transferred to the user device). Ex. 1002, ¶ 182. A POSA would have recognized that the same benefits achieved through automatic program updating in Heath would have applied to Barbosa-Falls's questionnaire, and therefore, that system was ready for such improvements. *Id*.

The modification to Barbosa-Falls such that the interactive questionnaire is automatically updated would have been well within a POSA's skillset. *Id.*, ¶¶ 183-184. Such modification would have involved the mere programming of the client/server system to automatically update periodically or upon certain events (*e.g.*,

a new version of the questionnaire being made available, the network reconnecting upon having been disconnected, etc.). *Id.*

Accordingly, Barbosa-Falls-Heath renders claim 7 obvious. *Id.*, ¶ 185.

C. Grounds C-D: Barbosa-Falls-Short and Barbosa-Falls-Heath-Short Each Renders Obvious Claim 7

If PO argues that Barbosa-Falls and Barbosa-Falls-Heath do not render obvious making user responses available via the Internet ([7f]), each of Barbosa-Falls-Short and Barbosa-Falls-Heath-Short does. Short teaches a system that allows collection of user response data and making that user response data available through the Internet. As discussed in detail below, Barbosa-Falls-Short and Barbosa-Falls-Heath-Short each renders claim 7 obvious. Ex. 1002, ¶ 186.

1. Barbosa-Falls and Barbosa-Falls-Heath each teaches [7a]-[7e]

As explained above in Grounds A and B, Barbosa-Falls and Barbosa-Falls-Heath respectively render obvious at least [7a]-[7e]. *See* Sections VIII.A.1.a-g, VIII.B. This analysis is not changed by the addition of Short's teachings for [7f]. Ex. 1002, ¶¶ 187-188.

2. Barbosa-Falls-Short and Barbosa-Falls-Heath-Short each renders obvious [7f]

Short teaches the claimed "*making available via the Internet any responses transferred to said central computer in step (e)*." Similar to Barbosa (and Barbosa-Falls and Barbosa-Falls-Heath), Short describes collecting user responses to questions entered through a user device over the Internet. Ex. 1008, 5:14-6:14, 7:14-

8:18, Fig. 1.[3] Short further discloses receiving that information at a central database (e.g., research database 6) and publishing that information over the Internet. *Id.*, Abstract, 25:17-27, 28:12-17, 29:7-13, Fig. 1. The user responses are made available using known Internet protocols, including HTML, thereby allowing access by designated persons via, in some examples, a website. *Id.*, 25:17-29:13, Figs. 1, 18-28. Accordingly, Short teaches [7f]. Ex. 1002, ¶¶ 189-191.

Applying Short's teachings to Barbosa-Falls and Barbosa-Falls-Heath would have resulted in the user response data collected through Barbosa's interactive questionnaire being made accessible over the Internet to others. This combination represents the simple use of a known technique to improve similar systems in the same way. Ex. 1002, ¶ 192. The similar systems were Barbosa's (and Barbosa-Falls's and Barbosa-Falls-Heath's) known interactive questionnaire that transmits responses to a server and provides those responses for analysis and review, and Short's Internet-based survey system that also collects questionnaire responses from users through their client devices and makes those responses available. Ex. 1005, 3:21-58, 9:36-9:49, Figs. 2, 4, 6, 7; Ex. 1008, Abstract, 25:17-29:13, Figs. 1, 18-28; Ex. 1002, ¶ 192. The known technique is Short's publishing of user response data through the Internet. Ex. 1008, Abstract, 25:17-29:13, Figs. 1, 18-28. Short's

[3] Citations to Ex. 1008 are formatted as page:line.

technique beneficially allows for data to be readily accessed using Internet-connected devices and benefits Barbosa in the same way. *Id.*, 25:17-22, 28:12-15. Barbosa recognizes that access to the collected responses is desirable. Ex. 1005, 7:41-66, 8:11-22, 8:44-48, 9:3-14, 9:36-10:30, 11:41-12:32, Figs. 6-8, 11-13. Accordingly, a POSA would have recognized that making user responses to a questionnaire program accessible for review and analysis via the Internet would have been an improvement. Ex. 1002, ¶ 193. As a result of the combination, the server of Barbosa-Falls and Barbosa-Falls-Heath would, e.g., generate a web interface so as to make the user response data accessible through the Internet, in place of or in addition to the distribution channels already described in Barbosa. *Id*., ¶¶ 193-194.

A POSA would have expected success in implementing such techniques. Ex. 1002, ¶ 195. The modification would only have required programming of the client/server system (e.g., the server platform) with web scripts and code to interface with a user response database. *Id.* Such programming would have been within a POSA's skillset. *Id.*

Accordingly, Barbosa-Falls-Short and Barbosa-Falls-Heath-Short each renders obvious [7f], and thus, claim 7. Ex. 1002, ¶ 196.

D. Grounds E-H: Barbosa-Falls, Barbosa-Falls-Heath, Barbosa-Falls-Short, and Barbosa-Falls-Heath-Short, Each Further in View of Torrance Renders Obvious Claim 8

1. Dependent Claim 8

Claim 8 depends from claim 7 and recites additional features that are taught by Torrance. Accordingly, and as explained below, each of Barbosa-Falls, Barbosa-Falls-Heath, Barbosa-Falls-Short, and Barbosa-Falls-Heath-Short, in further view of Torrance ("the Torrance combinations") renders obvious claim 8. Ex. 1002, ¶ 197.

a. "The method for collecting survey data according to claim 7 further comprising:"

The Barbosa-Falls, Barbosa-Falls-Heath, Barbosa-Falls-Short, and Barbosa-Falls-Heath-Short combinations ("the Barbosa combinations") each teaches claim 7. Sections VIII.A, VIII.B, VIII.C; Ex. 1002, ¶ 198. The addition of Torrance does not alter these analyses.

b. "assessing a charge for each transferred response received by said central computer."

As explained for [7e], the Barbosa combinations disclose automatically transferring via the loose network questionnaire responses collected in real-time to a central computer. Section VIII.A.1.g. It would have been obvious for the questionnaire to carry a charge per response based on the teachings of Torrance. Ex. 1002, ¶ 199.

Similar to Barbosa, Torrance describes "a method of collecting user responses to questions over a network." Ex. 1009, Abstract. Torrance describes a server 218

that communicates with clients 202, 204, e.g., by sending survey questions and collecting responses. *Id.*, ¶¶ [0039]-[0049]. The survey questions may be provided from a commercial client, which pays a "small fee per response." *Id.*, ¶¶ [0056]-[0058]. Those commercial clients include businesses and organizations interested in customer preferences. *Id.*, ¶¶ [0002], [0020]. Barbosa similarly describes a business-oriented question-response system. Ex. 1005, 1:20-48, 8:49-10:31.

Applying Torrance's teachings to the Barbosa combinations would have resulted in the questionnaire having questions for which a fee would be charged for each response. For example, commercial clients such as construction industry entities (tool manufacturers, equipment suppliers, contractors) may wish to use user responses for various purposes—e.g., insight into the needs, preferences and technical issues of potential consumers (in this example, technicians) to better market, or understand problems with, their products or services—and thus, be willing to pay a fee for each user response. Ex. 1002, ¶¶ 200-203; Ex. 1005, 8:49-9:49.

In another example, Barbosa's questionnaire system may charge a fee per response, per Torrance, to monetize its platform (e.g., by allowing companies to review real-time responses from their employees using the platform). Ex. 1002, ¶ 204. For example, Barbosa's questionnaire system may allow a variety of users (individuals or entities) to create questionnaires through its platform and to provide

those questionnaires to its employees, users, or the like. *Id.* To monetize this service, Barbosa's questionnaire system may charge a fee per response collected through questionnaires created using its platform. *Id.* Modifying the Barbosa combinations based on Torrance such that a fee is charged per transferred user response would have provided such benefits. *Id*. Such an implementation of Barbosa's questionnaire system is consistent with Barbosa's desire to "facilitate real-time access to remote programs … and/or information." Ex. 1005, 3:37-43; Ex. 1002, ¶ 204. Thus, the Torrance combinations teaches the claimed "*assessing a charge for each transferred response received*." Ex. 1002, ¶¶ 204-206; Ex. 1009, ¶¶ [0056]-[0058].

Modifying the Barbosa combinations based on Torrance's teachings merely combines known elements (those combinations' interactive questionnaire and Torrance's response fee structure) according to known methods (tracking responses to charge a per-response fee) to yield predictable results (an interactive questionnaire that assesses a fee per response). Ex. 1002, ¶ 207. These results are also achieved by applying a known technique (Torrance's fee-per-response system) to a known device ready for improvement (the Barbosa combinations' server administering questionnaires and collecting user responses). *Id*., ¶ 208 Finally, a POSA would have expected success in combining Torrance with Barbosa because it would have involved routine programming skills that a POSA would have had. *Id*., ¶ 209.

Accordingly, each of the Torrance combinations renders claim 8 obvious. *Id.*, ¶ 210.

E. Grounds I-J: Barbosa and Barbosa-Bandera Renders Obvious Claims 3, 4, 9-11 and 13-15

Claim 9 is an independent claim and claims 10, 11, and 13-15 are dependent thereon. Claims 9, 11, 13, and 15 were previously challenged in IPR2018-00535, but that matter settled and terminated before an institution decision was issued. Ex. 1025; Ex. 1026. Claims 3 and 4 are dependent on claim 1, which was found unpatentable in the Starbucks IPR.

1. Collateral Estoppel Applies to the Issues Decided by the Starbucks IPR

The Starbucks IPR found claims 1, 2, and 16-22 to be unpatentable in view of the same grounds presented here: Barbosa alone and Barbosa-Bandera. Ex. 1023. As PO did not appeal the Board's findings regarding those claims, those findings are binding in this proceeding and preclude PO from arguing that Barbosa and Barbosa-Bandera do not each teach or render obvious, e.g., claims 1 and 19. *See Alphatec Holdings, Inc. et al. v. Nuvasive, Inc.*, IPR2019-00361, Paper 59 at 23 (PTAB July 8, 2020) ("[A]s to a different petitioner, when the prior decisions finding claims unpatentable … those prior decisions … are binding in this proceeding, as a matter of collateral estoppel."); *Amazon.com, Inc., v. M2M Solutions LLC*, IPR2019-01205, Paper 43 at 45 (PTAB Jan. 25, 2021).

2. Independent Claim 9

PO is collaterally estopped from arguing that Barbosa and Barbosa-Bandera do not render obvious claim 9 because of the substantial similarity between claims 1, 9, and 19. Ex. 1049; Ex. 1023, 18-45. Although there are minor differences, "[c]omplete identity of claims is not required to satisfy the identity-of-issues requirement for claim preclusion." *Soverain Software LLC v. Victoria's Secret Direct Brand Mgmt., LLC*, 778 F.3d 1311, 1319 (Fed. Cir. 2015). Rather, where the "differences between the unadjudicated patent claims and adjudicated patent claims do not materially alter the question of invalidity, collateral estoppel applies." *Id.* (citations omitted); *see also Ohio Willow Wood Co. v. Alps South, LLC*, 735 F.3d 1333, 1342 (Fed. Cir. Nov. 15, 2013). Likewise, "the mere use of different words in [] portions of the claims does not create a new issue of invalidity." *Ohio Willow Wood Co.,* 735 F.3d at 1343. Accordingly, PO is estopped from disputing that Barbosa and Barbosa-Bandera renders obvious claim 9. Nonetheless, Petitioner explains why Barbosa and Barbosa-Bandera each renders obvious claim 9 below.

a. [9pre]: "A method for managing data comprising the steps of:"

Barbosa provides "methods of conducting field assessments." Ex. 1005, Abstract. If limiting, Barbosa discloses [9pre]. Ex. 1002, ¶¶ 211-213; *see also* Ex. 1023, 33, 37-45.

b. [9a]: "(a) establishing communications between a handheld computing device and an originating computer wherein said handheld computing device has a GPS integral thereto;"

As discussed in [7b], Barbosa discloses establishing communications between an originating computer (remote server 58) and a handheld computing device (device 10) that has GPS integral thereto. Section VIII.A.1.d; Ex. 1002, ¶ 214; *see also* Ex. 1023, 33, 37-45.

c. [9b]: "(b) using said GPS to automatically obtain location identifying information for said handheld computing device;"

As discussed in [7d], Barbosa discloses that the handheld device's GPS receiver automatically provides the device's location. Section VIII.A.1.f; Ex. 1002, ¶ 215; *see also* Ex. 1023, 28-33.

If PO argues that [9b] must be performed before receiving the questionnaire in [9d], Barbosa also describes automatically providing location information prior to receiving the questionnaire. Barbosa describes that its user device is also configured to obtain navigational assistance to a field problem/job, before the questionnaire is used. Ex. 1005, 6:40-57, 8:49-65, Fig. 7 (701, 702); Ex. 1002, ¶ 216. A POSA would have understood that the same server providing the questionnaire would also have been capable of providing navigation, as Barbosa teaches that "multiple client programs [may] share the services of a common server." Ex. 1005, 7:2-21; Ex. 1002, ¶ 216.

To the extent Barbosa does not disclose that the remote server providing the questionnaire also provides navigational assistance, a POSA would have found it obvious to configure the remote server in that manner. Ex. 1002, ¶¶ 217-219. Configuring Barbosa's server to additionally provide navigational assistance would have been the mere combination of known prior art elements (Barbosa's navigational assistance to a field problem/job and a server providing multiple client programs and services) according to known methods (programming Barbosa's server to provide another client/server service) to yield predictable results (the server providing navigational assistance as part of the assistance provided to the user in order to complete particular tasks). *Id*. A POSA would further recognize that in Barbosa's client/server system, the appraisal program may be initially downloaded once the user has navigated to the job site (step 702) using the navigation program. *Id*. Accordingly, Barbosa (and Barbosa-Bandera) teaches or renders obvious [9b], regardless of any ordering of steps. *Id*.

d. [9c]: "(c) transmitting said location identifying information from said handheld computing device to said originating computer;"

As discussed for [7e], Barbosa discloses that GPS information of handheld device 10 is transmitted to the originating computer (e.g., remote server 58). Section VIII.A.1.g; Ex. 1002, ¶ 220. Additionally, a POSA would recognize that GPS navigation through the server would include handheld device 10 sending location

information to the server to obtain directions. Ex. 1002, ¶¶ 221-222. Accordingly, Barbosa teaches or renders obvious transmitting location identifying information from a handheld device to an originating computer.

e. [9d]: "(d) receiving within said handheld computing device a transmission of a tokenized questionnaire customized for a particular location from said originating computer, said tokenized questionnaire comprising a plurality of device indifferent tokens;"

As discussed for [7a], Barbosa discloses designing a questionnaire customized for a particular location having branching logic and, as discussed in [7b], Barbosa also discloses a computer (e.g., remote server 58) transferring the questionnaire to the handheld device. Sections VIII.A.1.c-d; Ex. 1002, ¶ 223; *see also* Ex. 1023, 21-27 (finding that Barbosa teaches the nearly-identical limitation of claim 19, step (b)).

In addition, the Board has already found in the Starbucks IPR, which PO cannot contest, that Barbosa's questionnaire is tokenized. Ex. 1023, 21-27. In the Starbucks IPR, the Board construed "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" and, during prosecution, the Examiner asserted that "token" had "a special meaning (i.e., logical, mathematical or branching operation)." Section VII. Barbosa discloses that its questionnaire program "can be written in an object-oriented programming language such as Java…." Ex. 1005, 12:45-51. A JAVA-programmed questionnaire would have

included an index, an instruction, or a command that can represent something else such as a question, answer, or operation. Ex. 1002, ¶ 224. Therefore, Barbosa teaches a tokenized questionnaire that includes distinguishable units, such as indexes, instructions, or commands, that represent the questions, answers, or operations connecting the interactive questions and answers. *Id.*; *see* Ex. 1023, 21-25. For example, a POSA 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), and additionally would have included instructions and operations connecting the first question to the next. Ex. 1002, ¶ 224; *see* Ex. 1023, 21-25. Thus, Barbosa's questionnaire is tokenized. Ex. 1002, ¶ 224.

Barbosa's tokenized questionnaire includes the claimed "*plurality of device indifferent tokens*." Ex. 1023, 26-27 (analyzing nearly identical step (b) of claim 19 and finding that "Barbosa teaches or suggests the above portion of limitation (b)"). For example, Barbosa discloses that its questionnaire program can be "in the form of a JAVA applet." Ex. 1005, 12:14-18; *see also id.*, 12:45-47. A POSA would have understood that the JAVA programming language provides device independence. Ex. 1002, ¶ 225; Ex. 1010, 5:40-49; Ex. 1041, 14:54-56; Ex. 1042, 10:1-2. Accordingly, Barbosa's disclosure that its tokenized questionnaire is programmed in JAVA would have informed a POSA that it comprises a plurality of device-

independent tokens. Ex. 1002, ¶¶ 225-226. This disclosure also is consistent with PO's infringement contentions in prior litigations involving the '748 patent. *See*, *e.g.*, Ex. 1050, 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. 1051, 13 (same).

If PO argues that Barbosa alone does not teach or render obvious the claimed "*tokenized questionnaire comprising a plurality of device indifferent tokens*," Bandera expressly teaches these features. Bandera explains that Java provides device-indifferent and machine-independent code. Ex. 1002, ¶ 227; Ex. 1010, 5:40-44, 5:47-49. Accordingly, to the extent Barbosa's disclosure that its program was implemented using JAVA does not expressly disclose or render obvious "*device indifferent tokens*," it would have been obvious to implement Barbosa in view of Bandera. Ex. 1002, ¶¶ 227-231.

The combination of Barbosa and Bandera would have resulted in the tokenized program questionnaire of Barbosa being comprised of device indifferent tokens using JAVA, as taught in Bandera. This combination would have been obvious for multiple reasons. First, implementing the computer code for carrying out Barbosa's applications in view of Bandera represents the mere use of a known technique to improve similar devices and processes in the same way. The similar devices are Barbosa's and Bandera's devices running mobile applications that can

execute applications coded in JAVA. Ex. 1005, 12:14-18, 12:45-57; Ex. 1010, 5:40-49. The known technique is Bandera's device-indifferent JAVA code that improves the accessibility of those programs across different devices. Ex. 1002, ¶ 228. Bandera teaches multiple benefits of using device-independent JAVA code, including that it is "a portable and architecturally neutral language" and "is compiled into a machine-independent format that can be run on any machine." Ex. 1010, 5:37-43. Implementing Barbosa's program using device-indifferent and/or machine-independent JAVA code for Barbosa's tokens would have allowed for use of Barbosa's program by a variety of devices, just as it does for Bandera. Ex. 1002, ¶¶ 228-229.

The combination also represents the application of a known technique to a known system and process ready for improvement to yield predictable results. The known system is that of Barbosa, which uses "an object-oriented programming language such as Java" to implement its questionnaire. Ex. 1005, 12:14-18. The known technique is using JAVA code that is machine and operating system independent. Ex. 1010, 5:40-49. Barbosa's interactive questionnaire was ready for improvement since multiple devices access the program. Ex. 1002, ¶ 230. A POSA would have recognized that the same benefits achieved through JAVA programming in Bandera would have applied to the program in Barbosa, and therefore, the combination would have yielded predictable results (device-indifferent tokens). *Id*.

Accordingly, Barbosa and Barbosa-Bandera each teaches or renders obvious [9d]. *Id.*, ¶ 232.

f. [9e]: "(e) ending said communications between said handheld computing device and said originating computer;"

Barbosa (and thus, Barbosa-Bandera) also teaches or renders obvious [9e]. *See* Ex. 1023, 33 (finding that Barbosa teaches or suggests substantially similar limitations of claim 19, including step 19(d)); Ex. 1049.

As explained above in [9d] and [7b], Barbosa's handheld device 10 downloads the questionnaire from a server. Sections VIII.E.2.e, VIII.A.1.d; Ex. 1005, 6:2-6. 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]." Ex. 1005, 7:23-31. Having been stored locally, the download communication ends.

If PO argues that Barbosa does not expressly disclose ending communications between the handheld device and originating computer, a POSA would have understood that communications would obviously end after downloading as Barbosa discloses local storage of the questionnaire on the remotely-connected handheld device following download. Ex. 1005, 6:28-39; Ex. 1002, ¶ 235. That Barbosa's handheld device locally stores the questionnaire indicates that the questionnaire could and would be executed when no active communication link to server exists.

Id. And Barbosa's synchronization techniques (*e.g.*, Ex. 1005, 3:29-43) explicitly acknowledge that communication links are not always active. Ex. 1002, ¶ 235. Thus, a POSA would have recognized that, to conserve power and bandwidth, and absent any reason to maintain a connection, communications would have ended following the download. *Id*. Accordingly, Barbosa and Barbosa-Bandera each teaches or renders obvious [9e]. *Id.*, ¶¶ 233-235.

g. [9f1]: "(f) after said communications has been ended, when said handheld computing device at said particular location: (f1) 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 user, and,"

As explained above in [9e], Barbosa teaches communications with the server ending after the questionnaire has been downloaded. As explained for [7c], Barbosa discloses executing the questionnaire "*when said handheld computing device [is] at said particular location*." Ex. 1005, 6:58-7:22, 7:42-8:22; Section VIII.A.1.e. The program executes "to collect at least one response from a user." *Id.*, 7:42-8:22. A POSA would recognize that Barbosa's handheld device executes the questionnaire "*after said communications has been ended*," as this execution occurs after the questionnaire had been downloaded and stored in local memory for subsequent use. Ex. 1002, ¶ 238; *see* Ex. 1023, 27-33 (Barbosa teaches all limitations, including step (d) of claim 19).

Accordingly, Barbosa and Barbosa-Bandera each teaches or renders obvious [9f1]. Ex. 1002, ¶¶ 236-239.

h. [9f2]: "(f2) storing within said computing device said at least one response from the user;"

Barbosa's "handheld data management device for field assessments can include a memory for storing field assessment programs and related data." Ex. 1005, 3:44-46. "[D]ata collected with the device 10 … may be stored in local memory for subsequent use." *Id.*, 8:4-8. Thus, as the questionnaire is executed, Barbosa teaches storing at least one response from the user with the handheld device. Ex. 1002, ¶ 240; *see* Section VIII.A.1.e.

Accordingly, Barbosa and Barbosa-Bandera each teaches or renders obvious [9f2]. Ex. 1002, ¶ 241.

i. [9g]: "(g) establishing communications between said handheld computing device and a recipient computer; and,"

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. 1002, ¶ 242. This is identical to step (g) of unpatentable claim 19. Ex. 1023, 33; Ex. 1049. Barbosa discloses that "[r]ealtime analysis of data obtained may also be undertaken by remote processor (e.g., server ….)" and 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." Ex. 1005, 7:42-8:22, 9:36-49, 9:3-14; *see also* Section VIII.A.1.g.

As explained in VII, the "*originating computer*" and "*recipient computer*" may be the same computer.[4] *See also* Ex. 1001, claim 11.

Accordingly, Barbosa and Barbosa-Bandera each teaches or renders obvious [9g]. Ex. 1002, ¶¶ 242-244.

j. [9h]: "(h) transmitting a value representative of each of said at least one response stored within said handheld computing device to said recipient computer."

The Board previously found that Barbosa teaches substantially similar element (f) of claim 19. Ex. 1023, 33; *see* Ex. 1049. As explained above in [9f2] and [9g], Barbosa discloses that collected responses, which are stored by the handheld device, are transmitted to the server for analysis. Ex. 1005, 7:54-56, 9:36-49; *see also* Section VIII.A.1.g. At least one of those responses transmitted to the remote server are values that represent the responses. Ex. 1002, ¶ 245. For example, the current date or projected start date would have been provided as numerical values

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[4] If PO argues that the "originating computer" and "recipient computer" are not the same computer, Barbosa also teaches such features. Ex. 1005, 7:22-40, 8:49-9:14, FIG. 6; Ex. 1002, ¶ 243.

(*e.g.*, MM-DD-YYYY) as would GPS coordinates. Ex. 1005, 9:50-10:31; Ex. 1002, ¶ 245. As another example, square footage, a number of vents, and positions of vents (*e.g.*, measurements from a designated location) also would have been provided as numerical values. Ex. 1005, 9:20-26; Ex. 1002, ¶ 245.

Additionally, even if the claim requires transmitting a representative value for *every* response of the questionnaire, Barbosa (and thus Barbosa-Bandera) teaches such a process. Ex. 1002, ¶ 245. For example, a POSA would have well-recognized that data transmissions (whether text, programs, numbers, or other data) would have been sent over a computer network as bit values. *Id*.

Accordingly, Barbosa and Barbosa-Bandera each teaches or renders obvious [9h] and thus, claim 9. *Id.*, ¶ 246.

3. Dependent Claim 10

As explained below, Barbosa and Barbosa-Bandera each teaches or renders obvious claim 10.

a. [10pre]: "The method for managing data according to claim 9, wherein step (d) comprises the steps of:"

As explained above, Barbosa and Barbosa-Bandera each renders obvious claim 9. Section VIII.E.2; Ex. 1002, ¶¶ 247-248.

b. [10d1]: "(d1) creating a questionnaire,"

As explained in [9d] and [7a], Barbosa discloses creating a questionnaire. Sections VIII.E.2.e, VIII.A.1.c; Ex. 1002, ¶¶ 249-251; Ex. 1005, 5:52-6:27, 6:40-62,

7:23-48, 9:50-10:31, 12:45-51; Ex. 1023, 39-40 (Barbosa teaches or suggests claim 1, including element (a)); Ex. 1024, 8-9.

c. [10d2]: "(d2) tokenizing said questionnaire, thereby producing a plurality of device independent tokens representing said questionnaire,"

As discussed for [9d], Barbosa discloses tokenizing the questionnaire to produce device independent tokens representing the questionnaire. Section VIII.E.2.e; Ex. 1002, ¶ 252; Ex. 1023, 18-25, 33, 38-39.

d. [10d3]: "(d3) storing said plurality of tokens on a computer readable medium accessible by said originating computer,"

As explained for [9d], Barbosa's server 58 that provides the tokenized questionnaire corresponds to an "*originating computer*." Section VIII.E.2.e; *see*, *e.g.*, Ex. 1005, 7:42-8:3, 8:49-9:14, 9:36-40. Barbosa further explains that the tokenized questionnaire is stored by databases accessible to the remote server. Ex. 1005, 7:23-41. Accordingly, Barbosa (and Barbosa-Bandera) teaches or renders obvious storing the plurality of tokens on a computer-readable medium accessible by the remote server. Ex. 1002, ¶ 253.

e. [10d4]: "(d4) accessing said stored plurality of tokens from said originating computer,"

As discussed in [10d3], Barbosa discloses storing the tokenized questionnaire in databases accessible to the remote server. Ex. 1005, 7:22-39. For example, as discussed for [9d], the tokenized questions are provided to the handheld device from

the remote server. Section VIII.E.2.e; Ex. 1002, ¶ 254. As such, Barbosa (and Barbosa-Bandera) teaches or renders obvious accessing the stored tokens from the remote server for transmitting the program (i.e., the tokens) to the user's device. Ex. 1002, ¶ 254.

f. [10d5]: "(d5) transmitting said stored plurality of tokens from said originating computer to said handheld computing device, and,"

As discussed in [9d], Barbosa discloses transmitting the tokenized questionnaire comprising a plurality of tokens from the remote server to the handheld device. Ex. 1002, ¶ 255. Accordingly, Barbosa (and Barbosa-Bandera) teaches or renders obvious [10d5]. *Id*.

g. [10d6]: "(d6) receiving within said handheld computing device said transmission of said tokenized questionnaire from said originating computer."

As discussed in [9d], Barbosa discloses the handheld device receiving the tokenized questionnaire from the remote server. Ex. 1002, ¶ 256. Accordingly, Barbosa (and Barbosa-Bandera) teaches or renders obvious [10d6]. *Id*.

4. Dependent Claim 11: "The method for managing data according to claim 9, wherein said originating computer and said recipient computer are a same computer."

As explained for [9d], [9g], and [9h], Barbosa discloses that the remote server 58 performs the functions of the claimed "*originating computer*" (e.g., making download available) and of the "*recipient computer*" (e.g., receiving responses). Ex.

1005, 7:22-64; Sections VIII.E.2.e, VIII.E.2.i-j. Accordingly, Barbosa (and Barbosa-Bandera) teaches or renders obvious claim 11. Ex. 1002, ¶¶ 257-258.

5. Dependent Claim 13: "The method for managing data according to claim 9, wherein said questionnaire comprises at least one question that requests location identifying information and at least one other Question."

As discussed for [7a], Barbosa discloses that its questionnaire program includes a question "*request[ing] location identifying information*." Section VIII.A.1.c. Barbosa's questionnaire may include additional questions, such as "customer name, date, type of job," and others about "the problem or type of assessment" and then providing follow-up questions based on the previous answers. Ex. 1005, 6:58-67, 8:49-63, 9:50-10:31. Accordingly, Barbosa (and Barbosa-Bandera) teaches or renders obvious claim 13. Ex. 1002, ¶ 259.

6. Dependent Claim 14: "The method for managing data according to claim 13, wherein at least one of said at least one other question is selected from a group consisting of a food quality question, a service quality question, a waiting time question, a store number question, a location question, a time question, a date question, a temperature question, and a time of day question."

As explained for claim 13, Barbosa discloses additional questions including a location question and a date question. Ex. 1005, 9:50-10:31; Ex. 1002, ¶¶ 260-261. Accordingly, Barbosa and Barbosa-Bandera each teaches or renders obvious claim 14. Ex. 1002, ¶¶ 260-261.

7. Dependent Claim 15: "The method for managing data according to claim 9, wherein step (a) comprises the step of establishing communications via a global computer network between said handheld computing device and said originating computer."

Barbosa discloses Internet communications between the handheld device and the server. Ex. 1005, 5:52-6:27; Ex. 1002, ¶¶ 262-263. Accordingly, Barbosa (and Barbosa-Bandera) teaches or renders obvious claim 15. Ex. 1002, ¶¶ 262-263.

8. Dependent Claim 3

a. [3pre]: "The method for managing data of claim 1 wherein step (a) includes the substeps of:"

Based on the Board's findings in the Starbucks IPR, Barbosa and Barbosa-Bandera each teaches or renders obvious "creating a questionnaire comprising a series of questions customized for a location" (step (a) of claim 1). Ex. 1023, 37-45; Ex. 1002, ¶¶ 264-267. PO is estopped from arguing that Barbosa and Barbosa-Bandera do not teach or render obvious this step of claim 1.

b. [3a1]: "(a) creating a questionnaire by: (i) entering a series of questions into a questionnaire design computer program;"

As explained for [3pre], [9d] and [7a], Barbosa and Barbosa-Bandera each teaches or suggests "*creating a questionnaire*." Ex. 1002, ¶¶ 268-269; Sections VIII.E.8.a, VIII.E.2.e, VIII.A.1.c.

As explained for [7a], Barbosa discloses programming a questionnaire including questions. Ex. 1005, 12:45-51, 6:40-62, 5:52-6:27, 7:23-48, 8:49-9:15,

9:50-10:31, Fig. 6. A POSA would have understood that to have questions in the questionnaire, a creator would need to enter those questions in a creation program. Ex. 1002, ¶¶ 269-270. Accordingly, Barbosa and Barbosa-Banders each teaches or renders obvious "*entering a series of questions into a questionnaire design computer program*" of [3a1]. *Id*.

c. [3a2]: "(ii) identifying within said questionnaire design computer program the type of response allowed for each question of said series of questions; and"

As explained for [9d] and [7a], Barbosa discloses a variety of question types and suitable responses. Ex. 1002, ¶ 272; Sections VIII.A.1.c, VIII.E.2.e. Such responses include a customer or job site, assessment type, date, location, and the like. Ex. 1005, 8:49-10:31. A POSA would have understood that these questions would have allowed for various response types. Ex. 1002, ¶ 272. For example, an allowable response to a current or start date question would be a date, an allowable response to a question about building size would be numeric, and a question about program or assessment type would be one of the various possible responses (e.g., HVAC, plumbing, electrical). *Id*.

With Barbosa's questionnaire, "[t]he user would respond to program questions by providing specific answers/data 706 . . . in a format understandable by the program." Ex. 1005, 8:49-9:14. For the questionnaire program to provide data

in a recognizable format, the program code would have specified the allowed response types for each question of the series of questions. Ex. 1002, ¶ 273.

As such, Barbosa and Barbosa-Bandera each teaches or renders obvious [3a2]. *Id.*, ¶¶ 271-274.

d. [3a3]: "(iii) identifying within said questionnaire design computer program a branching path in said questionnaire for each possible response to each question of said series of questions."

As explained for [7a] and [3a2], Barbosa's questionnaire has internal branching logic between questions and identifies types of responses allowed for each question of the series of questions. Sections VIII.A.1.c, VIII.E.8.c. For example, Barbosa explains that based on user responses (e.g., the "identified subject matter 705"), "[t]he program would then start asking the user specific questions . . . related to the identified subject matter 705." Ex. 1005, 8:60-63. By asking different questions based on responses to previous questions, Barbosa teaches branching logic. Ex. 1002, ¶ 276. A POSA would have recognized that Barbosa's follow-on questions may similarly be followed by further response-specific questions. *Id.*.

If PO argues that Barbosa does not explicitly teach this, it would have at least been obvious to a POSA to adopt serial branching for questions in a questionnaire. *Id.*, ¶ 277. This would have been the mere use of a known technique (branching logic for questions) to improve similar products (each question in Barbosa's questionnaire) in the same way (tailored guidance based on each response). *Id.*

Thus, Barbosa's questionnaire program teaches or renders obvious "*a branching path in said questionnaire for each possible response to each question of said series of questions*." *Id.*, ¶¶ 277-279.

Accordingly, Barbosa and Barbosa-Bandera each teaches or renders obvious claim 3. *Id.*, ¶¶ 275-280.

9. Dependent Claim 4

a. [4pre]: "The method for managing data of claim 1 wherein step (b) includes the substeps of:"

[4pre] appears to mistakenly reference "step (b)" of claim 1, as [4b1]-[4b3] relate to the tokenization of 1(c). Regardless, based on the Board's findings in the Starbucks IPR, Barbosa and Barbosa-Bandera each renders obvious steps (b) and (c) of claim 1, and PO is estopped from arguing otherwise. Ex. 1023, 37-45; *see also id.*, 21-25 (analyzing similar claim 19); Ex. 1002, ¶¶ 281-290; *see also* Sections VIII.A.1.c, VIII.E.2.e, VIII.E.3.c.

b. [4b1]: "(b) tokenizing said questionnaire thereby producing a plurality of tokens representing said questionnaire by: (i) assigning at least one token to each question of said series of questions;"

As explained above, the PTAB previously determined that Barbosa and Barbosa-Bandera each teaches the tokenizing of step 1(c). Ex. 1002, ¶ 292; *see also* Sections VIII.E.2.e, VIII.E.3.c. For example, to provide an interactive questionnaire, Barbosa's 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. 1002, ¶ 292. And a POSA would have understood that Barbosa's program would have included instructions and code for each question. *Id*. Defining those instructions and code thus teaches "*assigning at least one token to each question of said series of questions*." *Id.*; s*ee* Ex. 1022, 22-25, 37-45.

Accordingly, Barbosa and Barbosa-Bandera each teaches or renders obvious [4b1]. Ex. 1002, ¶¶ 291-293.

c. [4b2]: "(ii) assigning at least one token to each response called for in said series of questions to identify the type of response required; and"

As discussed for [3a2], Barbosa's questionnaire requests user responses of various types. Ex. 1005, 7:47-48, 8:49-9:14; Section VIII.E.8.c. A POSA would have understood that different types of responses, such as text, option buttons, dropdown lists, etc., would require different code. Ex. 1005, 8:49-9:14, 9:50-10:31; Ex.1002, ¶ 295. Thus, each response field type would be indicated by "a distinguishable unit of a program, such as an index, an instruction, or a command," i.e., a token. Section VII (prior PTAB claim construction of token); Ex. 1002, ¶ 295. As such, Barbosa's questionnaire program "*assign[s] at least one token to each response called for in the series of questions to identify the type of response required*." Ex. 1002, ¶ 295.

Accordingly, Barbosa and Barbosa-Bandera each teaches or renders obvious [4b2]. *Id.*, ¶¶ 294-296.

d. [4b3]: "(iii) assigning at least one token to each branch in said questionnaire to identify the required program control associated with said branch."

As discussed for [7a], Barbosa teaches branching logic that defines which questions are presented based on a user's response to a previous question. Section VIII.A.1.c; Ex. 1005, 12:45-51, 6:40-62. That logic includes code (e.g., JAVA code, instructions) defining what question to ask next. Ex. 1005, 12:45-51, 6:40-62. The definition of this program code teaches "*assigning at least one token to each branch in said questionnaire to identify the required program control associated with said branch*." Section VII; Ex. 1023, 21-25 ("a program with instructions that ask questions and has indexes corresponding to available answers is a tokenized questionnaire"), 37-45; Ex. 1002, ¶ 298; *see* Section VIII.E.2.e (explaining that Barbosa and Barbosa-Bandera each teaches tokenized questionnaires).

Accordingly, Barbosa and Barbosa-Bandera each teaches or renders obvious claim 4. Ex. 1002, ¶¶ 297-299.

F. Grounds K-L: Barbosa-Heath and Barbosa-Bandera-Heath Each Renders Claim 6 Obvious

1. Dependent Claim 6

Claim 6 depends from claim 1 and recites incremental changes to a questionnaire, tokenizing the changes, and transmitting and incorporating the

tokenized changes. It would have been obvious to modify Barbosa (and Barbosa-Bandera) in view of Heath to arrive at such features.

As explained for claim 7, Heath discloses dynamically and automatically upgrading applications. Section VIII.B; Ex. 1007, 1:18-27, 1:41-55, 2:52-55. As also explained, it would have been obvious to have modified Barbosa in view of Heath such that Barbosa's interactive program (i.e., the recited "*executable questionnaire*") is automatically updated. Section VIII.B; Ex. 1002, ¶¶ 300-301. The addition of Bandera does not change that analysis.

a. [6a]: making at least one incremental change to a portion of the questionnaire;

Heath teaches making incremental changes to network applications, as well as downloading and updating only the needed and changed components to "alleviate[] the concerns of time and efficiency." Ex. 1007, 1:50-55, 2:58-62, 4:49-58. In Barbosa-Heath, as discussed above, the questionnaire would be updated using such a technique. Section VIII.B; Ex. 1002, ¶ 302. Accordingly, Barbosa-Heath (and Barbosa-Bandera-Heath) teaches or renders obvious [6a]. Ex. 1002, ¶ 302.

b. [6b]: tokenizing said at least one incremental change to said questionnaire to obtain change tokens;

As noted above, the Board previously determined in the Starbucks IPR, that claims 1 and 19 are unpatentable based on Barbosa teaching the tokenization of a questionnaire into tokens ([1b] and [19b]). Ex. 1023, 21 ("Barbosa teaches . . . a

tokenized questionnaire"), 22, 26-27, 33, 37-40. Just as Barbosa's questionnaire "has indexes corresponding to available answers," so too would any changes to the questions (and allowable answers) of the questionnaire. *See id.*, 22; Ex. 1002, ¶ 303. That is, the updates to the questionnaire program would be coded in the same way as the questionnaire program itself. Ex. 1002, ¶ 303. Accordingly, those indexes representing the questionnaire changes in Barbosa-Heath and Barbosa-Bandera-Heath teaches or renders obvious [6b]. *Id*.

c. [6c]: transmitting at least a portion of said change tokens to said remote computing device in real time, said transmitted change tokens comprising less than the entire tokenized questionnaire;

As discussed above, Barbosa-Heath and Barbosa-Bandera-Heath each teaches or renders obvious automatically transferring updated application components to a client. Heath discloses that application updates may include downloading "only the needed and changed components of an application program." Ex. 1007, 1:50-55, 2:58-62, 4:49-58. Accordingly, in Barbosa-Heath and Barbosa-Bandera-Heath, only the tokens representing the incremental changes (claimed "*said transmitted change tokens comprising less than the entire tokenized questionnaire*") would be transmitted to the user's device (claimed "*transmitting at least a portion of said change tokens to said remote computing device*"). Ex. 1002, ¶¶ 304-305.

If PO argues Heath does not teach *real-time* transmission of change tokens, a POSA would have found it obvious in Barbosa-Heath and Barbosa-Bandera-Heath

to have transmitted application updates in real-time. *Id.*, ¶¶ 306-307. Such a system would have been a combination of prior art elements (Barbosa's teaching of downloading a questionnaire program as well as real-time analysis and feedback/guidance using the questionnaire application, and Heath's teaching of updating applications) according to known methods (programming Heath's application updating process to operate in real-time) to yield predictable results (change tokens reflecting changes to the questionnaire program being downloaded in real-time). Ex. 1005, Abstract, 3:37-43, 5:52-6:27, 6:58-7:21, 8:49-49, Claims 15, 25; Ex. 1007, 3:20-38, 4:34-48, 5:30-67, 6:39-57, 7:33-55, Figs. 3A-C, 4A-E; Ex. 1002, ¶ 306. A POSA would have recognized that, in Barbosa-Heath and Barbosa-Bandera-Heath, real-time transmission of application updates would provide the latest questionnaire functionality and content, leading to more up-to-date feedback and guidance (e.g., based on new or updated questions). Ex. 1002, ¶¶ 306-307.

Accordingly, Barbosa-Heath and Barbosa-Bandera-Heath teaches or renders obvious [6c]. *Id.*, ¶¶ 304-307.

d. [6d]: (d) incorporating said transmitted change tokens into said questionnaire at said remote computing device.

Heath teaches that after application updates are downloaded, those updates are implemented at the client. Ex. 1007, 1:56-2:5, 2:63-3:6, 6:1-19, 6:39-67; Ex.

1002, ¶¶ 308-309. Barbosa also teaches that the downloaded questionnaire is executed at the remote device. Ex. 1005, 5:52-6:27, 7:42-8:48, 11:1-28, 12:33-13:5, Figs. 6, 10-13, Claims 1, 9. Accordingly, Barbosa-Heath and Barbosa-Bandera-Heath each teaches or renders obvious [6d], and thus, claim 6. Ex. 1002, ¶¶ 308-309.

G. Grounds M-N: Barbosa-Heath-Pinera and Barbosa-Bandera-Heath-Pinera Each Renders Obvious Claim 6

As discussed in Section VIII.F, Barbosa-Heath and Barbosa-Bandera-Heath each teaches or renders obvious claim 6. However, if PO argues that Barbosa-Heath and Barbosa-Bandera-Heath do not teach transmitting change tokens in *real-time*, ([6c]), Pinera does.[5] Pinera provides real-time application updates to client devices. Ex. 1011, Title, Abstract, 2:30-32, 3:18-29, 4:20-59, FIGs. 1-3. When updates become available, notification messages are automatically broadcast to clients. *Id.*, 4:20-59, 6:21-7:2, Figs. 1, 2, Claims 1, 3, 5, 6. In response, client modules automatically obtain the updated application components in real-time. *Id.*, 2:30-49, 6:21-7:2, Claims 1, 3, 5, 6; *see also id.*, 1:23-34, 2:15-26. It would have been obvious to a POSA to modify Barbosa (and thus, Barbosa-Heath) such that application updates were provided in real-time so that a user would have the most

[5] The addition of Pinera does not change the analysis of [6a], [6b], and [6d].

updated application version quickly (e.g., as soon as the updates are available). Ex. 1002, ¶¶ 310-315.

This represents the mere combination of prior art elements according to known methods to yield predictable results. Barbosa-Heath teaches incremental application updates while Pinera teaches real-time application updates. Ex. 1011, 2:30-32, 3:18-29, 4:1-59, 6:21-7:2, 7:14-9:9, Figs. 1-3. The known methods were programming communication protocols (e.g., automated push or pull) to deliver application components automatically upon those components becoming available (i.e., in real-time). *Id.*, 4:20-59, 6:21-7:2, 7:14-9:9, Figs. 1-3; Ex. 1002, ¶ 313; *see* Ex. 1040, Abstract, 1:53-58, 2:61-3:12, 5:21-38, 6:46-8:62, Figs. 3, 5. The predictable result is that application updates for the interactive questionnaire would be downloaded to the handheld device in real-time. Ex. 1002, ¶ 313. A POSA would have had the skills to implement such modifications as they would only require re-programming the application update processes in Barbosa-Heath using known techniques. *Id*. The addition of Bandera would not have changed this obviousness analysis. Accordingly, each of Barbosa-Heath-Pinera and Barbosa-Bandera-Heath-Pinera renders obvious claim 6. *Id.*, ¶ 315.

H. Grounds O-P: Barbosa-Morris and Barbosa-Bandera-Morris Each Renders Claim 12 Obvious

1. Dependent Claim 12

As explained below, Barbosa-Morris and Barbosa-Bandera-Morris each renders obvious claim 12. Ex. 1002, ¶ 316.

a. [12pre]: "The method for managing data according to claim 9, wherein said step (f1) comprises the steps of:"

As explained above, Barbosa and Barbosa-Bandera each renders obvious claim 9. Ex. 1002, ¶ 317.

b. [12i]: "(i) requiring a user to authenticate with said handheld computing device,"

Morris teaches user authentication for unlocking, accessing, and using a handheld device. Ex. 1012, Abstract, 1:13-18, 2:60-3:21, 4:43-5:39, Fig. 3. By allowing device access only upon authentication (e.g., PIN verification), Morris teaches the recited "*requiring a user to authenticate with said handheld computing device*." Ex. 1002, ¶ 318.

A POSA would have found it obvious to modify Barbosa (and Barbosa-Bandera) to require user authentication for its handheld devices. Ex. 1002, ¶¶ 319-322. These combinations represent the use of a known technique to improve similar devices in the same way. The known technique is Morris's process for requiring user authentication to access and use a portable computing device, and the similar devices are Barbosa's and Morris's portable devices. Ex. 1005, 1:49-67, 3:21-4:26,

5:29-8:10, 8:23-48, FIGs. 1-6; Ex. 1012, 2:60-3:21, 4:3-8, 4:43-5:38, Figs. 2, 3. The improvement was enhanced security for portable devices. Ex. 1012, 1:7-31, 3:18-21; Ex. 1002, ¶ 320.

These combinations also combine prior art elements according to known methods to yield predictable results. The prior art elements are Barbosa's handheld computing devices and Morris's user authentication for such devices. Ex. 1005, 1:49-67, 3:21-4:26, 5:29-8:10, 8:23-48, Figs. 1-6; Ex. 1012, 2:60-3:21, 4:3-8, 4:43-47, Figs. 2, 3. The known method was programming devices to require user authentication. Ex. 1012, 4:43-5:38, FIG. 3. The predictable results are that Barbosa's portable device would require user verification before data and programs of the device could be accessed. Ex. 1002, ¶ 321. The modification would have been within the skillset of a POSA as it would require straightforward changes to the device's programming. *Id.*, ¶ 322.

c. [12ii]: "(ii) only if the user is able to authenticate with said handheld computing device, 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 user, and,"

As discussed for [12i], in the proposed combinations, the user is able to access the data and programs on the device (e.g., the questionnaire) only after being authenticated by the device. And, as discussed for claim 9 (Section VIII.E.2), Barbosa's questionnaire is tokenized and thus, execution of the program teaches

"*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 user*." Ex. 1002, ¶ 323.

d. [12iii]: "(iii) if the user is unable to authenticate with said handheld computing device, taking no further action."

As discussed for [12i] and [12ii], in the proposed combinations, the user is able to access the device (e.g., the questionnaire) only after being authenticated. A POSA would understand that, if a user is not able to authenticate with the handheld device, the user would not be allowed access to the data and program on the device. Ex. 1012, 3:3-17; Ex. 1002, ¶¶ 324-325; *see* Ex. 1012, 1:13-18, 1:39-48, 2:1-8, 5:9-34 (authentication required "[t]o unlock the portable electronic device 110"). This teaches the claimed "*if the user is unable to authenticate with said handheld computing device, taking no further action*." Ex. 1002, ¶¶ 324-325.

Accordingly, Barbosa-Morris and Barbosa-Bandera-Morris each renders obvious claim 12. *Id.*, ¶¶ 316-325

I. Grounds Q-R: Barbosa-Hamlin and Barbosa-Bandera-Hamlin Each Renders Obvious Claim 3

As discussed in Section VIII.E.8, Barbosa and Barbosa-Bandera each teaches or renders obvious claim 3. Hamlin also teaches creating a questionnaire with "*a questionnaire design computer program*." Hamlin teaches creating surveys (e.g., via JavaScript/Applets) by specifying questions, possible responses, and response-

question branching. Ex. 1055, Title, Abstract, 2:55-3:2, 5:40-9:28, 11:55-67, 14:40-15:33, Figs. 3-6. It would have been obvious to a POSA to modify Barbosa (and Barbosa-Bandera) such that the questionnaire is created using Hamlin's questionnaire design computer program to make it easier for users to create questionnaires. Ex. 1002, ¶¶ 326-331.

This represents the combination of known elements (Barbosa and Barbosa-Bandera's questionnaire system and Hamlin's program for creating questionnaires) according to known methods (using, e.g., JavaScript interfaces to create questionnaires) to yield predictable results (questionnaires created using the questionnaire-creation program). *Id.*, ¶¶ 329-331. Barbosa and Barbosa-Bandera teach questionnaire programs created using Java while Hamlin teaches Java interfaces to create custom questionnaires. Ex. 1005, 12:45-51, 6:40-62, 5:52-6:27, 7:23-48, 8:49-9:15, 9:50-10:31, Fig. 6; Ex. 1010, 5:37-6:2; Ex. 1055, 5:40-9:28, 11:55-67, 14:40-15:33, FIGs. 3-6; Ex. 1002, ¶ 329. A POSA would have had the skills to implement such modifications as they would only require using a known questionnaire design program to create the questionnaire in Barbosa and Barbosa-Bandera. *Id*. Accordingly, Barbosa-Hamlin and Barbosa-Bandera-Hamlin each renders obvious claim 3. *Id.*

IX. GROUNDS FOR STANDING & FEE PAYMENT

Petitioner hereby certifies that the '748 patent is available for, and Petitioner is not barred or estopped from requesting, this *inter partes* review.

The undersigned authorizes the charge of any required fees to Deposit Account No. 19-0733.

X. CONCLUSION

Inter partes review should be instituted and claims 3, 4, and 6-15 canceled.

Dated: May 8, 2025

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CERTIFICATION UNDER 37 CFR § 42.24(d)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petition for Inter Partes Review totals 13,991 which is less than the 14,000 allowed under 37 CFR § 42.24(a)(1)(i).

Pursuant to 37 C.F.R. § 42.24(a)(1), this count does not include the table of contents, the table of authorities, mandatory notices under § 42.8, the certificate of service, this certification of word count, the claims listing appendix, or appendix of exhibits.

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Dated: May 8, 2025

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.105, I hereby certify that I caused a true and correct copy of this Petition for *Inter Partes* Review in connection with U.S. Patent No. 9,454,748 and supporting evidence to be served via FedEx Priority Overnight on May 8, 2025, on the following:

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CLAIM LISTING APPENDIX

U.S. Pat. No. 9,454,748

Designation	Claim Language
Claim 3	
[3pre]	3. The method for managing data of claim 1 wherein step (a) includes the substeps of:
[3a1]	(a) creating a questionnaire by: (i) entering a series of questions into a questionnaire design computer program;
[3a2]	(ii) identifying within said questionnaire design computer program the type of response allowed for each question of said series of questions; and
[3a3]	(iii) identifying within said questionnaire design computer program a branching path in said questionnaire for each possible response to each question of said series of questions.
Claim 4	
[4pre]	4. The method for managing data of claim 1 wherein step (b) includes the substeps of:
[4b1]	(b) tokenizing said questionnaire thereby producing a plurality of tokens representing said questionnaire by: (i) assigning at least one token to each question of said series of questions;
[4b2]	(ii) assigning at least one token to each response called for in said series of questions to identify the type of response required; and
[4b3]	(iii) assigning at least one token to each branch in said questionnaire to identify the required program control associated with said branch.
Claim 6	
[6pre]	6. A method for modifying a questionnaire used in data management according to the method of claim 1 including the steps of:
[6a]	making at least one incremental change to a portion of the questionnaire;
[6b]	tokenizing said at least one incremental change to said questionnaire to obtain tokens;

Designation	Claim Language
[6c]	transmitting at least a portion of said change tokens to said remote computing device in real time, said transmitted change tokens comprising less than the entire tokenized questionnaire
[6d]	(d) incorporating said transmitted change tokens into said questionnaire at said remote computing device.
Claim 7	
[7pre]	7. A method for collecting survey data from a user and making responses available via the Internet, comprising:
[7a]	(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;
[7b]	(b) automatically transferring said designed questionnaire to at least one loosely networked computer having a GPS integral thereto;
[7c]	(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;
[7d]	(d) while said transferred questionnaire is executing, using said GPS to automatically provide said location identifying information as a response to said executing questionnaire;
[7e]	(e) automatically transferring via the loose network any responses so collected in real time to a central computer; and,
[7f]	(f) making available via the Internet any responses transferred to said central computer in step (e).
Claim 8	
[8a]	8. The method for collecting survey data according to claim 7 further comprising:
[8b]	(f) assessing a charge for each transferred response received by said central computer.
Claim 9	
[9pre]	9. A method for managing data comprising the steps of:
[9a]	(a) establishing communications between a handheld computing device and an originating computer wherein said handheld computing device has a GPS integral thereto

Designation	Claim Language
[9b]	(b) using said GPS to automatically obtain location identifying information for said handheld computing device;
[9c]	(c) transmitting said location identifying information from said handheld computing device to said originating computer;
[9d]	(d) receiving within said handheld computing device a transmission of a tokenized questionnaire customized for a particular location from said originating computer, said tokenized questionnaire comprising a plurality of device indifferent tokens;
[9e]	(e) ending said communications between said handheld computing device and said originating computer;
[9f1]	(f) after said communications has been ended, when said handheld computing device at said particular location: (f1) 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 user, and,
[9f2]	(f2) storing within said computing device said at least one response from the user;
[9g]	(g) establishing communications between said handheld computing device and a recipient computer; and,
[9h]	(h) transmitting a value representative of each of said at least one response stored within said handheld computing device to said recipient computer.
Claim 10	
[10pre]	10. The method for managing data according to claim 9, wherein step (d) comprises the steps of:
[10d1]	(d1) creating a questionnaire;
[10d2]	(d2) tokenizing said questionnaire, thereby producing a plurality of device independent tokens representing said questionnaire;
[10d3]	(d3) storing said plurality of tokens on a computer readable medium accessible by said originating computer;
[10d4]	(d4) accessing said stored plurality of tokens from said originating computer,
[10d5]	(d5) transmitting said stored plurality of tokens from said originating computer to said handheld computing device, and,

Designation	Claim Language
[10d6]	(d6) receiving within said handheld computing device said transmission of said tokenized questionnaire from said originating computer.
Claim 11	
11	11. The method for managing data according to claim 9, wherein said originating computer and said recipient computer are a same computer.
Claim 12	
[12pre]	12. The method for managing data according to claim 9, wherein said step (f1) comprises the steps of:
[12i]	(i) requiring a user to authenticate with said handheld computing device,
[12ii]	(ii) only if the user is able to authenticate with said handheld computing device, 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 user, and,
[12iii]	(iii) if the user is unable to authenticate with said handheld computing device, taking no further action.
Claim 13	
13	13. The method for managing data according to claim 9, wherein said questionnaire comprises at least one question that requests location identifying information and at least one other Question.
Claim 14	
14	14. The method for managing data according to claim 13, wherein at least one of said at least one other question is selected from a group consisting of a food quality question, a service quality question, a waiting time question, a store number question, a location question, a time question, a date question, a temperature question, and a time of day question.
Claim 15	
15	15. The method for managing data according to claim 9, wherein step (a) comprises the step of establishing communications via a global computer network between said handheld computing device and said originating computer.