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Paper 32
Date: August 5, 2020

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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AMERICAN MULTI-CINEMA, INC.; AMC ENTERTAINMENT HOLDINGS, INC.; BOSTON MARKET CORPORATION; MOBO SYSTEMS, INC.; MCDONALD'S CORPORATION; MCDONALD'S USA; PANDA RESTAURANT GROUP, INC.; PANDA EXPRESS INC.; PAPA JOHN'S INTERNATIONAL, INC.; STAR PAPA LP; and PAPA JOHN'S USA, INC.,
Petitioner,

v.

FALL LINE PATENTS, LLC,
Patent Owner.

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IPR2019-00610
Patent 9,454,748 B2

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Before MICHELLE N. WORMMEESTER, SHEILA F. McSHANE, and JOHN R. KENNY, *Administrative Patent Judges.*

KENNY, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining Some Challenged Claims to be Unpatentable
*35 U.S.C. § 318(a)*

# I. INTRODUCTION

American Multi-Cinema, Inc.; AMC Entertainment Holdings, Inc.; Boston Market Corp; Mobo Systems, Inc. d/b/a OLO Online Ordering; McDonald's Corp; McDonald's USA; Panda Restaurant Group, Inc.; Panda Express Inc.; Papa John's International, Inc.; Star Papa LP; and Papa John's USA, Inc. (collectively, "Petitioner") filed a Petition (Paper 7, "Pet.")[1] requesting an *inter partes* review of claims 1, 2, 5, 7, and 19–22 ("challenged claims") of U.S. Patent No. 9,454,748 B2 (Ex. 1001, "the '748 patent," "challenged patent"). An *inter partes* review of all challenged claims was instituted on August 7, 2019. Paper 14 ("Inst. Dec."). After institution, Fall Line Patents, LLC ("Patent Owner") filed a Patent Owner Response (Paper 17, "PO Resp."), Petitioner filed a Reply (Paper 19, "Pet. Reply"), and Patent Owner filed a Sur-reply (Paper 20, "PO Sur-reply"). An oral hearing was held on April 28, 2020. Paper 25 ("Tr.").

After the oral hearing, we authorized additional briefing on a claim construction issue concerning certain claim terms. Paper 24. Pursuant to that authorization, Petitioner filed a Supplemental Brief (Paper 27) ("Pet. Supp. Br.") as did Patent Owner (Paper 28, "PO Supp. Br."). Petitioner responded to Patent Owner's Supplemental Brief (Paper 29, "Pet. Supp. Resp."), and Patent Owner responded to Petitioner's Supplemental Brief (Paper 30, "PO Supp. Resp.").[2]

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[1] The Petition was also filed on behalf of Starbucks Corporation, but Starbucks entered into a settlement agreement and was terminated from this proceeding. Pet. 1; Paper 11, 13.

[2] Petitioner requested authorization to a file a motion to strike Section II.B. of Patent Owner's supplemental response (Paper 30) on the grounds that

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). As explained below, Petitioner has proven by a preponderance of the evidence that claims 1, 2, 5, and 19–22 of the '748 patent are unpatentable. Petitioner, however, has not proven by a preponderance of the evidence that claim 7 is unpatentable.

*A. Related Proceedings*

The parties identify a number of related litigations in the Eastern District of Texas involving the challenged patent. Pet. 1–2; Paper 9, 2–3. As the parties state, the challenged patent was also reviewed in IPR2018-00043, which has been remanded to the Board. Pet. 1–2; Paper 9, 2–3; *see Fall Line Patents, LLC v. Unified Patents, LLC*, 2019-1956, 2020 WL 4307768, at *4 (Fed. Cir. July 28, 2020). The parties further indicate that the challenged patent was the subject of the petition filed in IPR2018-00535, but that proceeding was terminated before an institution decision issued. Pet. 2; Prelim. Resp. 3. Petitioner further indicates that U.S. Patent No. 7,822,816, of which the challenged patent is a continuation, was the subject of Reexamination No. 90/012,829 and was the subject of IPR2014-00140, the latter of which was terminated after institution. Pet. 3.

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Section II.B. exceeded the authorized scope of briefing. Paper 31. We denied that authorization because we could discern, without additional briefing, whether Section II.B. exceeded its authorized scope. *Id.* Further, the issue is moot because we considered that supplemental response only for the claim construction issue that the parties were authorized to address (Paper 24), and not for any other purpose.

*B. The Challenged Patent*

The challenged patent is directed to a method of collecting data from a remote computing device, such as a handheld computing device, by creating and delivering a questionnaire to the remote computing device, executing the questionnaire on the remote computing device, and transmitting responses to a server via a network. Ex. 1001, code (57).

Figure 1 reproduced below, is a diagram of a system for data management (Ex. 1001, 6:57, 7:13–23):

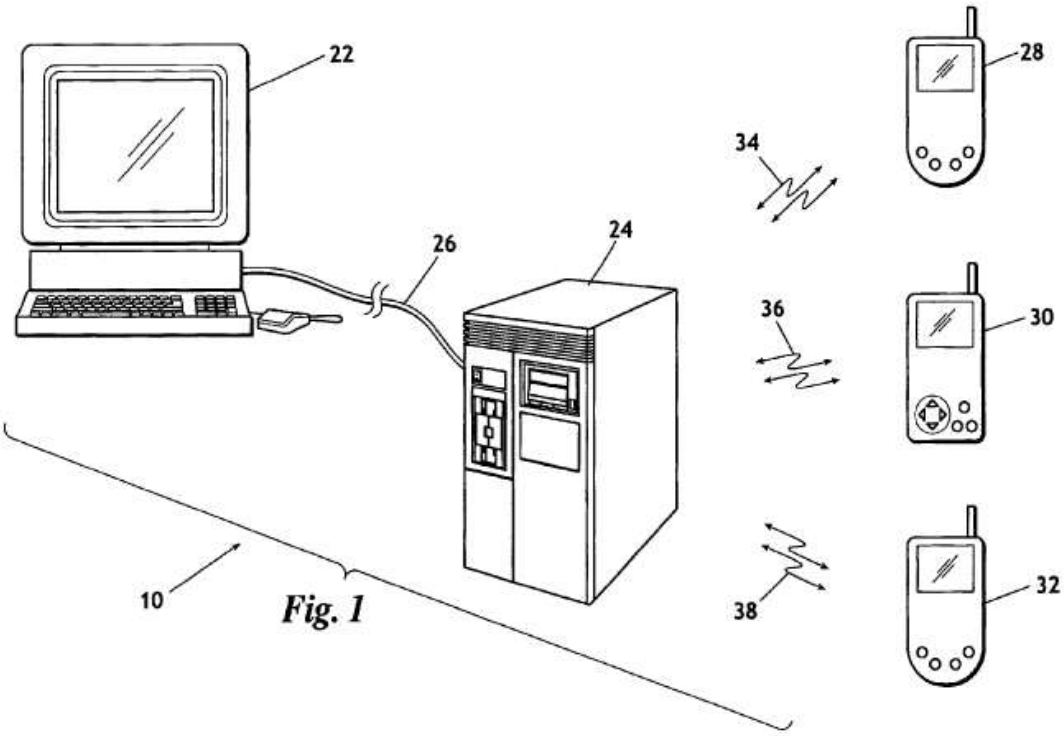


*Fig. 1*

In particular, Figure 1 shows system 10 including server 24; handheld computers 28, 30, and 32, which are operated remotely from server 24; and computer 22, which provides for administration of the system and reviewing data collected by the system. *Id.* at 7:13–23, Fig. 1. Server 24 is connected to computer 22 via Internet 26, a local area network, or a private wide area

network. *Id.* at 7:24–28, Fig. 1. Server 24 is connected to handheld computers 28, 30, and 32 via connections 34, 36, and 38, respectively, which are loose network connections, meaning that handheld computers 28, 30, and 32 and server 24 are tolerant of intermittent network connections. *Id.* at 7:24–26, 59–62.

Figure 2, reproduced below, illustrates a diagram of system 10 as it is used for form (e.g., questionnaire) creation (Ex. 1001, 6:58–59, 8:11–17, 8:35–37):

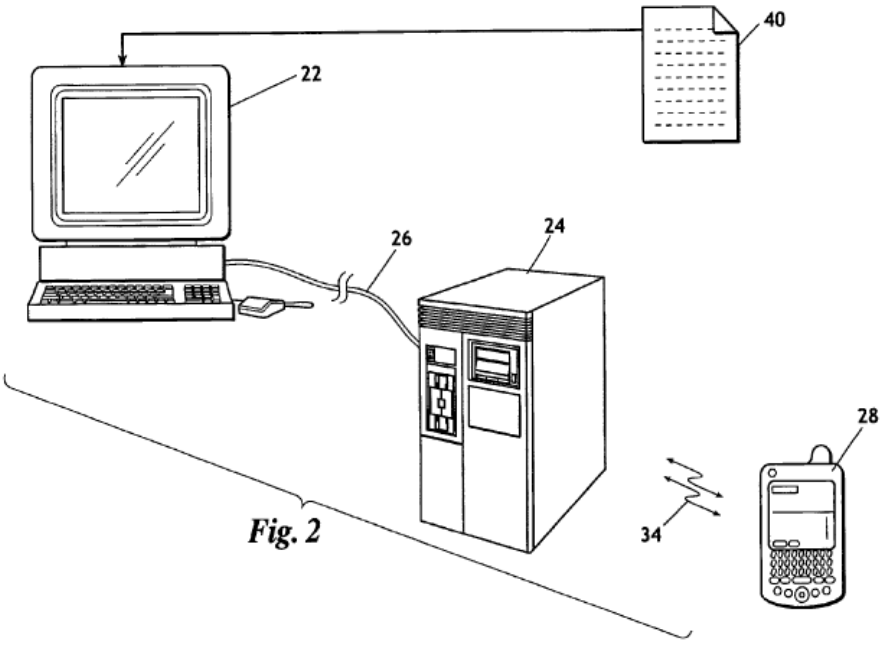


*Fig. 2*

Figure 2 shows system 10 is used to create questionnaire 40. Ex. 1001, 8:38–9:6. Computer 22 has an interface that allows a user to create this questionnaire and distribute it to handheld devices. *Id.* at 8:38–50. As the client enters questions and selects response types, server 24 builds a stack of questions and responses, and assigns indices, or tokens, which point to each question or response. *Id.* at 8:53–56, 9:3–6. Each token can correspond to a

logical, mathematical, or branching operation. *Id.* at 8:56–59, 9:3–6. When questionnaire 40 is complete, server 24 sends the stack of questions and defined responses to the handheld devices (e.g., handheld computer 28). *Id.* at 9:3–6. System 10 can incrementally update the questionnaire on the handheld devices. *Id.* at 9:14–18.

For example, system 10 can track mystery shoppers at restaurant chains. Ex. 1001, 10:37–43. System 10 can track the time it takes a mystery shopper to go through a drive through window. *Id.* at 10:41–43. When the mystery shopper enters a parking lot for a franchise, a handheld device with a GPS receiver can identify the franchise. *Id.* at 10:55–59. The device can also record the amount of time it takes for the shopper to go through a drive through line. *Id.* at 10:55–11:21.

### *C. Illustrative Claims*

Petitioner challenges claims 1, 2, 5, 7, and 19–22 of the challenged patent, of which, claims 1, 7, 19, and 21 are independent. Claims 7 and 19 are reproduced below:

> 7. A method for collecting survey data from a user and making responses available via the Internet, comprising:
>
> (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;
>
> (b) automatically transferring said designed questionnaire to at least one loosely networked computer having a GPS integral thereto;

(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;

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

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

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

Ex. 1001, 14:45–67.

19. A method for managing data comprising the steps of:

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

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

said tokenized questionnaire including at least one question requesting location identifying information,

said tokenized questionnaire comprising a plurality of device independent tokens;

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

(d) after said communications has been ended,

(dl) executing at least a portion of said plurality of tokens comprising said questionnaire on said handheld computing device to collect at least one response from a first user, and,

> (d2) storing within said computing device said at least one response from the first user;
>
> (d3) using said GPS to automatically obtain said location identifying information in response to said at least one question that requests location identifying information;
>
> (e) establishing communications between said handheld computing device and a recipient computer;
>
> (f) transmitting a value representative of each of said at least one response stored within said handheld computing device to said recipient computer; and,
>
> (g) after receipt of said transmission of step (f), transmitting a notice of said received value representative of each of said at least one response to a second user.

Ex. 1001, 16:48–17:12.

*D. Instituted Grounds of Unpatentability and Asserted Prior Art*

Trial was instituted on the following grounds of unpatentability[3] asserted in the Petition:

[3] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011), amended 35 U.S.C. §§ 102 and 103. Because the application from which the '748 patent issued was filed in October 2010, before March 16, 2013, the effective date of the relevant amendments, the pre-AIA versions of § 103 applies. Ex. 1001, code (22).

| Claims Challenged | 35 U.S.C. § | Reference(s)/Basis |
|---|---|---|
| 1, 19–22 | 103(a) | Barbosa[4,5] |
| 1, 19–22 | 103(a) | Barbosa, Bandera[6] |
| 7 | 103(a) | Barbosa, Falls[7] |
| 1, 2, 5, 19–22 | 103(a) | Hancock[8] |
| 1, 2, 5, 19–22 | 103(a) | Hancock, Bandera |
| 7 | 103(a) | Hancock, Falls |

Inst. Dec. 7, 53.

Petitioner relies on declarations by its expert witness, Mr. Kendyl Roman (Exs. 1005, 1018). Likewise, Patent Owner relies on a declaration by its expert witness, Dr. Samuel Russ (Ex. 2006).

[4] U.S. Patent No. 6,961,586 B2, filed Sept. 17, 2001, claims the benefit of an application filed on Sept. 18, 2000, and issued on Nov. 1, 2005 (Ex. 1002, "Barbosa"). The earliest filing date that the '748 patent claims the benefit of is August 19, 2002. Ex. 1001, code (60).

[5] For the Barbosa ground and the Hancock ground, Petitioner also expressly relies on the knowledge of an ordinarily skilled artisan. Pet. 5. We refer to these grounds as Barbosa-alone and Hancock-alone grounds, but included within these grounds is the knowledge of an ordinarily skilled artisan.

[6] U.S. Patent No. 6,332,127 B1, issued Dec. 18, 2001 (Ex. 1004, "Bandera").

[7] U.S. Patent No. 5,991,771, issued Nov. 23, 1999 (Ex. 1017, "Falls").

[8] U.S. Patent No. 6,202,023 B1, issued Mar. 13, 2001 (Ex. 1003, "Hancock").

## II. ANALYSIS

### *A. Level of Ordinary Skill*

In our Institution Decision, we determined that an ordinarily skilled artisan at or before the priority date for the challenged patent "would have a bachelor's degree in computer science, computer engineering, electrical engineering, or a related subject, or equivalent industry or trade school experience in programming software applications." Inst. Dec. 12. During trial, neither party objected to that assessment of an ordinarily skilled artisan. *See generally* PO Resp.; Pet. Reply. Thus, we maintain this assessment.

### *B. Claim Construction*

We construe claims "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340, 51,340, 51,358 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018) (now codified at 37 C.F.R. § 42.100(b) (2019)).

#### *1. Claim Constructions in Our Institution Decision*

In our Institution Decision, we provided the following claim constructions:

| Claim Term | Construction |
|---|---|
| GPS integral thereto | Global Positioning System equipment integral thereto. |
| token | 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. |
| central computer, originating computer, and recipient computer[9] | encompasses a computer having the ability to perform functions associated with an originating computer, a recipient computer, and/or a central computer. |
| loosely networked | tolerant of intermittent network connections and tolerant of the type of network connection available. |

Inst. Dec. 12–18.

During the trial, neither party objected to these constructions/partial construction. *See* PO Resp., generally; Pet. Reply, generally. Under the circumstances, we maintain these constructions and partial construction.

*2. GPS and Device Independence/Indifference*

During trial, the parties implicitly raised a claim construction issue in their arguments on obviousness regarding the recitation in claims 1, 19, and 21 of GPS, "device indifferent tokens," and "device independent tokens," which the parties expressly addressed in their supplemental briefing. Pet. 7; PO Resp. 17–21; Pet. Supp. Br. 1–5; PO Supp. Br. 3–5. In particular, claim 1 of the challenged patent recites the following limitations:

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

[9] We partially construed these terms. Inst. Dec. 17.

> (e) when said remote computing device is at said location, executing at least a portion of said plurality of tokens representing said questionnaire at within said remote computing device to collect a response from a user; [and]
>
> (f) automatically entering the *GPS coordinates* into said questionnaire.

Ex. 1001, 1:47–65 (emphasis added).

Claim 19 recites these limitations:

> (b) receiving within said handheld computing device a transmission of a tokenized questionnaire from said originating computer, said tokenized questionnaire including at least one question requesting location identifying information, said tokenized questionnaire comprising a plurality of *device independent tokens*;
>
> (dl) executing at least a portion of said plurality of tokens comprising said questionnaire on said handheld computing device to collect at least one response from a first user, and,
>
> (d3) using said *GPS* to automatically obtain said location identifying information in response to said at least one question that requests location identifying information.

*Id.* at 16:48–17:12 (emphasis added).

And claim 21 recites these limitations:

> (a)(2) receiving within said handheld computing device a transmission of a tokenized questionnaire, including at least one question requesting *GPS coordinates* and at least one additional question, said tokenized questionnaire comprising a plurality of *device independent tokens*;
>
> (a)(4)(i) executing at least a portion of said plurality of tokens comprising said questionnaire on said handheld computing device, [and]
>
> (a)(4)(ii) automatically entering the *GPS coordinates* into said questionnaire.

*Id.* at 17:15–18:27 (emphasis added).

Patent Owner proposes construing the above limitations as requiring that step 1(f) in claim 1, step (d3) in claim 19, and step (a)(4)(ii) of claim 21 be performed by executing device independent or device indifferent tokens. PO Supp. Br. 3–5. Petitioner opposes that construction, arguing that step 1(f) in claim 1, step (d3) in claim 19, and step (a)(4)(ii) of claim 21 do not need to be performed by executing device independent or device indifferent tokens. Pet. Supp. Br. 1–5.

We agree with Petitioner and do not construe step 1(f) of claim 1, step (d3) of claim 19, and step (a)(4)(ii) of claim 21 as requiring execution by device independent or device indifferent tokens. We begin with claim 1. Step 1(f) does not contain any express limitations on how the recited GPS coordinates are automatically entered into the recited questionnaire. In comparison, step 1(c) requires that the questionnaire be tokenized. Step 1(f) merely recites "automatically entering the GPS coordinates into said questionnaire." The Specification of the challenged patent does not define any terms recited in step (f) that would lead to a requirement that the GPS coordinates in that step would have to be automatically entered into the recited questionnaire via execution of device indifferent tokens. To the contrary, the Specification teaches that "position information" (e.g., GPS coordinates) can be obtained automatically using "subsystems that are already present in the handheld device . . . if the device includes a GPS receiver." Ex. 1001, 5:42–47. Neither party has identified any portion of the prosecution history requiring the recited GPS coordinates be entered into the questionnaire by executing device indifferent tokens. *See generally* Pet. Supp. Br., PO Supp. Br., Pet. Supp. Resp., PO Supp. Resp. And neither

party provided any dictionary definitions that indicate that the recited GPS coordinates must be entered into the questionnaire by executing device indifferent tokens. *See generally* Pet. Supp. Br., PO Supp. Br., Pet. Supp. Resp., PO Supp. Resp. Based on the record, and particularly claim language itself and the Specification, we determine that step (f) in claim 1 does not have to be performed by device indifferent tokens.

Patent Owner's contrary arguments are not persuasive. First, Patent Owner argues that the challenged claims require an operating instruction system that utilizes device indifferent or device independent tokens. PO Supp. Br. 1 ("Claims in the '748 patent that call for a tokenized questionnaire require an operating instruction system ('OIS') on the recipient device that can process the tokens of the questionnaire."), 3 ("The token is interpreted and executed by the OIS."). But claim 1 does not recite an operating instruction system, and Patent Owner does not identify any terms recited in claim 1 that purportedly require the use of the disclosed operating instruction system. PO Supp. Br. 1–5; PO Supp. Resp. 1–2. In fact, during prosecution, the applicant presented a claim (application claim 9) that expressly recited the operating instruction system, but the applicant subsequently canceled that claim. Ex. 1007, December 2012 Amendment and Response, 5; *Id.* at May 2016 Amendment and Response, 6, 16..

Second, Patent Owner argues that all of the tokens in the questionnaire in claim 1 must be device indifferent so the same questionnaire can be used without change on different devices. PO Supp. Br. 4. But Patent Owner does not identify any terms in claim 1 that require that the same questionnaire be capable of being used on different devices without being changed. *Id.* Moreover, claim 1 does not require that tokens

in the questionnaire be executed to enter the GPS coordinates into the questionnaire. As mentioned, the Specification discloses that subsystems present in the handheld device, rather than in the questionnaire, can automatically obtain position information from a device with a GPS receiver. Ex. 1001, 5:42–47. Thus, we do not construe step (f) of claim 1 as requiring performance by executing device indifferent tokens.

Claims 19 and 21 recite similar steps to those discussed above for claim 1, but the corresponding steps in claims 19 and 21 recite "device independent tokens," rather than "device indifferent tokens." The parties, however, draw no distinction between device independent tokens and device indifferent tokens, and the Specification does not distinguish between these tokens. *See generally* Pet. Supp. Br., PO Supp. Br., Pet. Supp. Resp., PO Supp. Resp. Thus, for purposes of this Decision, the terms "device independent tokens" and "device indifferent tokens" are synonyms.

The parties present the same arguments and evidence for step (d3) in claim 19 and step (a)(4)(ii) in claim 21 as they do for step (f) in claim 1. *See generally* Pet. Supp. Br., PO Supp. Br., Pet. Supp. Resp., PO Supp. Resp. Thus, we determine that step (d3) in claim 19 and step (a)(4)(ii) in claim 21 do not have to be performed by executing device independent tokens for the same reasons that step (f) in claim 1 does not have to be performed by executing device indifferent tokens.

In sum, we determine that step 1(f) in claim 1, step (d3) in claim 19, and step (a)(4)(ii) of claim 21 do not need to be performed by executing device independent or device indifferent tokens.

*C. Analysis of the Asserted Grounds of Unpatentability*

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are "such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Further, "[t]o satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness." *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). We analyze the asserted grounds with these principles in mind.

*1. Secondary Considerations of Non-Obviousness*

Patent Owner does not present any evidence or argument regarding secondary considerations of non-obviousness relating to any challenged claim. And Petitioner does not expressly argue the existence of any secondary considerations. In response to an argument by Patent Owner, however, Petitioner asserts that Java Specification Request 179 (Exhibit 1019) was contemporaneously developed at the time of the alleged invention of the challenged patent. Pet. Reply 7–8. Further, Petitioner contends that development of Java Specification Request 179 demonstrates that there was

no fundamental impediment to Java applets receiving GPS data without invoking the Java native interface as of the effective filing date for the challenged patent. *Id.* We address the parties' arguments regarding that Java Specification Request in Section II.C.2.b.i.5. below.

*2. Asserted Obviousness over Barbosa*

Petitioner argues that claims 1 and 19–22 would have been obvious over Barbosa. Pet. 18–37.

*a. Barbosa*

Barbosa relates to systems for conducting field assessments utilizing handheld data management devices, such as personal digital assistants, handled computers, two-way pagers, and Web/WAP enabled telephony. Ex. 1002, 1:10–16.

Figure 6 of Barbosa is reproduced below:

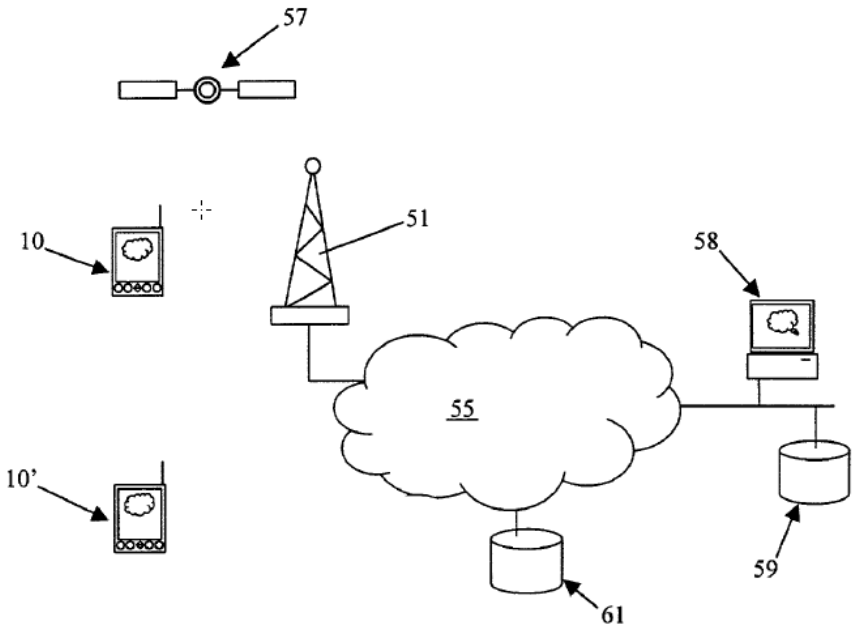

Figure 6 illustrates "an environment for extended operation/communication between a handheld device 10 (client) and remote management system 58 (e.g., server, desktop PC)." Ex. 1002, 7:23–26.

Barbosa discloses that a user in the field may utilize handheld device 10 for assessment of a field problem by executing an industry-specific program on the handheld device related to the problem being addressed. Ex. 1002, 7:42–47. During program execution, the user may access remote resources (e.g., information, data, and assistance) via wireless communication systems 51 and networks 55. *Id.* at 7:48–51. Information may be obtained from server 58 located at the user's enterprise or from other network 55 resources available to the user (e.g., Web pages provided/ obtained over the Internet). *Id.* at 7:51–54.

Barbosa further discloses that "the handheld device may also be equipped within a position module 46 to enable the handheld device to utilize positioning systems or methods known in the art such as satellite position (e.g., Global Positioning System (GPS)) or signal triangulation techniques." Ex. 1002, 6:40–44.

*b. Independent Claim 19*

*i. Disputed Limitations*

The parties dispute whether Barbosa teaches or suggests part of limitation (b), and limitations (d1), and (d2) of claim 19. We address these limitations below.

> *(1) (b) receiving within said handheld computing device a transmission of a tokenized questionnaire from said originating computer.*

Petitioner argues that Barbosa teaches this receiving limitation by disclosing that its device 10 receives "a set of instructions in a code module"

or "templates (e.g., task/punch lists) and/or programs" from server 58. Pet. 20 (quoting Ex. 1002, 6:1–2, 7:27–28). According to Petitioner, Barbosa's device 10 and server 58 are a handheld computing device and an originating computer, respectively. *Id.* at 18–19. Petitioner asserts that device 10 receives from server 58 "a set of instructions in a code module" and/or "templates (e.g., task/punch lists) and/or programs." *Id.* at 20 (quoting Ex. 1002, 6:1–2, 7:27–28). Petitioner further asserts that "[t]he downloaded code modules, templates, and/or programs represent a questionnaire." *Id.* (citing Ex. 1005 ¶ 125). Petitioner quotes Barbosa's disclosures that the "programs operated by the microprocessor ask questions or provide guidance related to a particular field problem" and "[t]he program would prompt the user for input of data related to the problem." *Id.* (quoting Ex. 1002, 6:60–61, 7:47–48).

Petitioner argues that the instructions, templates, and programs that Barbosa's device 10 receives from server 58 are tokenized. Pet. 20. Petitioner quotes Barbosa's disclosure 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 . . . ." *Id.* (quoting Ex. 1002, 12:45–51). Petitioner argues that "[a] questionnaire (e.g., downloaded code modules, templates, and/or programs) written in an object oriented programming language[,] such as Java[,] would have included an index, an instruction, or a command that can represent something else such as a question, answer, or operation." *Id.* at 20–21 (citing Ex. 1005 ¶ 126). Petitioner concludes that "[t]herefore, Barbosa discloses a tokenized questionnaire." *Id.* at 21.

In addition, Petitioner argues that "Barbosa's program provides '[a]n interactive question and answer session.'" Pet. 21 (citing Ex. 1002, 6:62). Petitioner asserts that "[t]o do so, the program would have included distinguishable units, such as indexes, instructions, or commands that represent the questions, answers, or operations connecting the interactive questions and answers." *Id.* (citing Ex. 1005 ¶ 127). Petitioner cites Barbosa's disclosure that "[t]he program may start by asking for the identification of [] the client or matter 703 (e.g., customer, or job site)," and "[t]he program may next ask the representative to identify the problem or type of assessment 704 (e.g., HVAC, plumbing, electrical, landscaping, etc.)." *Id.* (quoting Ex. 1002, 8:54–59). Petitioner argues that, as a result, an ordinarily skilled artisan would have understood "that Barbosa's program would have included instructions that ask these questions (e.g., identification of type of assessment), as well as indexes corresponding to the available answers (e.g., HVAC, plumbing, electrical, or landscaping), and additionally would have included instructions and operations connecting the first question to the next." *Id.* (citing Ex. 1005 ¶ 127).

Patent Owner asserts that Barbosa's template is not a tokenized questionnaire. PO Resp. 7. Patent Owner contends that Barbosa only discloses text for its templates, not executable tokens. *Id.* at 8. Patent Owner further argues that the assertion that Barbosa's template would have included an index, an instruction, or a command if written in Java is conjecture. *Id.* Further, Patent Owner asserts that Barbosa's discussion of program code that can execute on a user's computer does not refer to Barbosa's handheld computers. *Id.* at 9–10. Patent Owner further contends that two of the languages that Barbosa mentions for running on computers,

Smalltalk and C++, were desktop languages in 2000, when the priority application for Barbosa was filed. *Id.* at 9–10, n.2. In addition, Patent Owner asserts that Barbosa's discussion of Java applets can only be referring to Java on desktops. *Id.* at 14.

We find that Petitioner has proven that Barbosa teaches the recited receiving limitation. First, device 10 and server 58 are, respectively, a handheld computer and an originating computer. Ex. 1005 ¶ 123. Barbosa discloses "device 10 [is] easily portable such that it substantially fit within the palm of a user[']s hand." Ex. 1002, 5:43–45. And server 58 is an originating computer. *Id.* at 7:23–53, Fig. 6; Ex. 1005 ¶ 123.

Second, Barbosa teaches receiving at device 10 a program from server 58. Ex. 1005 ¶ 125. Barbosa discloses storing "a set of instructions" in RAM 26 of device 10 and further discloses downloading those instructions to RAM 26 from a server when needed. Ex. 1002, 5:67–6:6. Barbosa further discloses linking device 10 with server 58 to provide, among other things, programs. *Id.* at 7:23–29. The instructions transferred to device 10 are received by RAM 26 of that device (i.e., they are stored in RAM 26). *Id.* at 5:67–6:6. Barbosa expressly discloses sending a Java applet program to device 10. *Id.* at 12:14–18; *see also id.* at 11:63-12:32; Ex. 1005 ¶ 125.

Third, Barbosa teaches the use in device 10 of a program with a tokenized questionnaire. Ex. 1005 ¶¶ 125–127. Barbosa discloses that handheld device 10 can be used to assess a field problem. Ex. 1002, 7:42–43. Barbosa states a "user can execute a[n] industry-specific program on the handheld executed program . . . [where] [t]he user interacts with the handheld executed program to obtain an initial field assessment." *Id.* at

7:43–45. And Figure 7 of Barbosa discloses a flow chart for a construction application. Ex. 1002, 7:42–47; 8:49–50. In that flow chart, at a job site, the assessor starts an appraisal program 702 on device 10. *Id.* at 7:42–47, 8:49–54. "The program may start by asking for the identification of [] the client or matter 703 (e.g., customer, or job site)," and "[t]he program may next ask the representative to identify the problem or type of assessment 704 (e.g., HVAC, plumbing, electrical, landscaping, etc.)." *Id.* at 8:54–59. Mr. Roman testifies that, as result, an ordinarily skilled artisan would have understood that Barbosa's program would have included instructions that ask these questions as well as indexes corresponding to the available answers (e.g., HVAC, plumbing, electrical, or landscaping) and would have had instructions and operations connecting the first question to the next. Ex. 1005 ¶ 127. As discussed in Section II.B.1., we construe "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." Therefore, a program with instructions that ask questions and has indexes corresponding to available answers is a tokenized questionnaire.

We are persuaded that these disclosures in Barbosa teach or suggest the recited receiving limitation.

We are not persuaded by Patent Owner's counterarguments. As mentioned, Patent Owner argues that Barbosa does not disclose tokenized *templates*. PO Resp. 7. This argument, however, is of no significance because, as discussed above, Barbosa discloses tokenized *programs*, and claim 19 does not recite that its tokenized questionnaire is a template. Ex. 1002, 7:42–47; 8:49–59; Ex. 1005 ¶ 127.

As discussed above, Patent Owner argues that Barbosa's disclosure of transmitting programs to a "user's computer" does not describe the transmission of programs to a user's "handheld computer." PO Resp. 9–10. Patent Owner contends that Barbosa would have used the term "handheld computer" if it meant to include transmission to the user's handheld computers. *Id.* We disagree: a handheld computer is a computer. Therefore, the term "user's computer" encompasses a "user's handheld computer." In addition, Barbosa expressly discloses sending a Java applet program to a user's handheld computer: "[t]he template may operate in combination with programs resident *in the handheld computer* or may be accompanied *by a computer program transmitted from the se[r]ver (e.g., in the form of a JAVA applet*)." Ex. 1002, 12:14–18 (emphasis added); *see also id.* at 11:63-12:32.

As further discussed above, Patent Owner asserts that two of the languages that Barbosa discloses for running on computers, Smalltalk and C++, were desktop languages in 2000, when the priority application for Barbosa was filed. PO Resp. 9–10, n.2. This argument is also of no significance because Barbosa expressly discloses transmitting a Java program to the user's handheld device, so, in Barbosa, Smalltalk and C++ need not necessarily be the languages used for programs that run on the user's handheld device. Ex. 1002, 12:14–18.

As indicated above, Patent Owner asserts that Barbosa's discussion of Java applets can only be referring to Java on desktops. PO Resp. 14. To support this argument, Patent Owner cites Dr. Russ's testimony that the version of Java that was available for wireless devices at the time of Barbosa was Java 2 Platform Micro Edition ("J2ME"). *Id.* at 12 (citing Ex. 2006

¶ 50). Dr. Russ testifies that J2ME did not support applets, quoting the following excerpt from Programming Wireless Devices with the Java 2 Platform, Micro Edition (copyright date 2001) (Ex. 2002), which indicates that the Mobile Information Device Profile (MIDP) does not support the familiar Java applet model:

> Due to strict memory constraints and the requirement to support application interaction and data sharing within related applications, the Mobile Information Device Profile does not support the familiar Applet model introduced by JavaTM 2 Platform, Standard Edition (J2SETM). Rather, MIDP introduces a new application model that was designed to augment the CLDC [Connected Limited Device Configuration] application model and to allow multiple Java applications to share data and run concurrently on the KVM [K Virtual Machine].

Ex. 2006 ¶ 50, quoting Ex. 2002, 43.

But neither Patent Owner nor Dr. Russ explains why Barbosa's handheld device would have to run MIDP. PO Resp. 11–14; Ex. 2006 ¶ 50. The Programming Wireless Devices reference teaches that two different versions of J2ME were available for computers that were not servers, desktops or personal computers: the connected device configuration (CDC) and the connected limited device configuration (CLDC), upon which MIDP rests. Ex. 2002, 8–9. The reference further teaches that the CLDC is for low-end consumer devices, whereas the CDC is for high-end consumer devices. *Id.* at 15. We do not find that the handheld device 10 in Barbosa would have been a low-end consumer device. Barbosa describes using the device for assessors in the construction industry, for project management, and for criminal investigations, which would not appear to be low-end consumer applications. Ex. 1002, 8:49–50, 10:32–33, *see also* 1:59–65 ("Currently, handheld data management devices such as PDAs or Palm PCs

can have as much computing power as some desktop personal computers and have been used in a wide variety of applications including wireless communication (infrared and radio frequency), GPS (global positioning system) mapping, Internet access and database storage"). Moreover, because Barbosa expressly teaches sending applets to handheld device 10, an ordinarily skilled artisan implementing Barbosa's embodiment would not have chosen a configuration of Java that would not permit the sending of those applets (like CLDC). *Id.* at 12:14–18.

Patent Owner additionally asserts that it is conjecture that Barbosa's template would have included an index, an instruction, or a command if written in Java. PO Resp. 8–9. We addressed this issue in the Institution Decision, and agree that the fact that Barbosa discloses that its program can be written in an object oriented language such as Java does not necessarily mean that its questionnaire is tokenized. *See, e.g.*, Institution Decision 23 n. 10. As discussed above, however, we rely on other disclosures in Barbosa when finding that Barbosa teaches this claim limitation.

We have reviewed the complete record and find that Petitioner has proven that Barbosa teaches or suggests the recited receiving limitation.

*(2) [b] said tokenized questionnaire including at least one question requesting location identifying information*

Petitioner argues that the tokenized questionnaire that device 10 receives from server 58 includes at least one question requesting location identifying information. Pet. 22–23. Petitioner cites Barbosa's disclosure that "[o]nce a program is opened on the handheld device, the assessor may be asked (e.g., prompted) to identify the job 801 (e.g., location, customer name, date, type of job)." *Id.* at 22–23 (quoting Ex. 1002, 9:54–56) (emphasis omitted). Petitioner further argues that Barbosa discloses that

location identifying information can be provided using GPS coordinates, quoting Barbosa that "GPS coordinate[s] associated with the collection of data [is an] important attribute[]."). *Id.* at 23 (quoting Ex. 1002, 12:30–32). Patent Owner does not dispute that Barbosa teaches a questionnaire with at least one question requesting location identifying information. PO Resp. 16–17.

We find that Barbosa teaches or suggests the above limitation. Ex. 1002, 9:54–56.

*(3) [b] said tokenized questionnaire comprising a plurality of device independent tokens*

Petitioner argues that Barbosa's tokenized questionnaire comprises a plurality of device independent tokens. Pet. 23. Petitioner cites Barbosa's disclosures that the "computer program transmitted from the [server]" can be "in the form of a JAVA applet" and the "[c]omputer program code for carrying out operations of the present invention can be written in an object oriented programming language such as Java . . . ." *Id.* (citing Ex. 1002, 12:14–18, 12:45–47).

Patent Owner does not dispute that Java is a device independent platform, but Patent Owner disputes that Barbosa teaches or suggests running Java on a handheld device. PO Resp. 9–10.

Based on this record, we find that an ordinarily skilled artisan would have recognized that Java is a programming language that provides device independence—it runs irrespective of the particular hardware or operating system of any given device. Ex. 1005 ¶ 132. Bandera supports this finding, stating that "JAVA® is a portable and architecturally neutral language," and "JAVA® source code is compiled into a machine-independent format that can be run on any machine with a JAVA® runtime system known as the

JAVA® Virtual Machine (JVM)." Ex. 1004, 5:40–44. Bandera further discloses that "[M]achines running under diverse operating systems, including UNIX, Windows NT, and MacIntosh having a JVM can execute the same JAVA® program." *Id.* (quoting Ex. 1004, 5:47–49). As discussed in Section II.C.2.i.1., we disagree with Patent Owner's argument that Barbosa does not teach running Java on a handheld device.

We find that Petitioner has proven that Barbosa teaches or suggests the above portion of limitation (b).

> *(4) (d1) executing at least a portion of said plurality of tokens comprising said questionnaire on said handheld computing device to collect at least one response from a first user*

Petitioner argues that Barbosa discloses executing the downloaded program that represents the questionnaire to provide "[a]n interactive question and answer session." Pet. 26 (quoting Ex. 1002, 6:58–64). Petitioner further argues that the downloaded program collects at least one response from a user. *Id.* Petitioner quotes Barbosa's disclosure that "[t]he program would prompt the user for input of data related to the problem." *Id.* (quoting Ex. 1002, 7:47–48).

Patent Owner argues that Barbosa's templates do not have executable tokens because Barbosa's templates are little more than lists. PO Resp. 8.

We find that Petitioner has proven that Barbosa teaches executing the tokens in the programs that are downloaded to its handheld devices to provide an interactive question and answer session. We further find that this execution collects at least one response from the user. Ex. 1002, 7:47–48. As discussed in Section II.C.2.i.1., Patent Owner's arguments that Barbosa's

templates do not have tokens is of no significance because Barbosa discloses downloadable programs with executable tokens.

Based on the evidence of record, we find that Petitioner has proven that Barbosa teaches the above limitation.

> *(5) (d3) using said GPS to automatically obtain said location identifying information in response to said at least one question that requests location identifying information*

Petitioner argues that Barbosa teaches obtaining location identifying information automatically using the GPS receiver of device 10 in response to a question. Pet. 27. Petitioner cites Barbosa's disclosure that "[l]ocation information may be provided by the handheld device automatically via [the] resident GPS module." *Id*. (quoting Ex. 1002, 10:14–17).

Patent Owner argues that Barbosa does not teach using device independent tokens to acquire location identifying information from a GPS device. PO Resp. 11–14. Patent Owner argues that the version of Java that could run on wireless devices at the time did not include a GPS receiver as a standard feature. *Id.* at 12. Patent Owner argues that, even with the full version of Java available at the time, to access a hardware feature such as a GPS receiver, a native routine would need to be executed via the Java Native Interface. *Id.* Patent Owner argues that invoking that interface would preclude device independence. *Id.* at 13. Further, Patent Owner argues that J2ME was the version of Java available for wireless devices at the relevant time and J2ME did not support the Java Native Interface or user-defined class loaders. *Id.*

In the Reply, Petitioner argues that Barbosa was not limited to implementation with Java 2 Platform, Micro Edition. Pet. Reply 7.

Petitioner asserts that an ordinarily skilled artisan would have known how to apply known techniques used by Java 2 Standard Edition and Java 2 Enterprise Edition to wireless devices and would have done so once the wireless devices' then limited computing power improved. *Id.* Petitioner also argues the near contemporaneous development of Java Specification Request 179 (Exhibit 1019) demonstrates that there was no fundamental impediment to applets receiving GPS data without invoking the Java native interface and all that would be required is an update to the API. *Id.* at 8. Petitioner argues that this update occurred shortly after the earliest priority date for the '748 patent. *Id.* Petitioner further argues that it also relied on Smalltalk or C++ for this limitation and the device independent token limitations. *Id.* at 6.

In its Sur-Reply, Patent Owner repeats its argument concerning Java and handheld devices. PO Sur-Reply 11. Patent Owner also argues that Petitioner did not make a sufficient showing for this limitation or the device independent limitations with respect to Smalltalk or C++. *Id.* at 11–12. Further, Patent Owner argues that Petitioner should not have relied on Exhibit 1019 because the exhibit was published after the '748 patent's priority date, asserting that 35 U.S.C. § 311(b) limits consideration of patentability in an *inter partes* review of prior art consisting of patents or printed publications.[10] *Id.* at 3–8. Patent Owner also argues that Petitioner failed to provide a source code example supporting its showing for this limitation. *Id.* at 15–16.

[10] Patent Owner also argues that Petitioner should not have relied on Exhibit 1021. PO Sur-Reply 4. This argument is moot because we do not rely upon Exhibit 1021 in this Decision.

We find the record shows that Barbosa teaches the above recited limitation. As described above, Barbosa's questionnaire asks a question requesting location identifying information. When discussing the flow chart of Figure 8 for an HVAC assessment, Barbosa describes: "Once a program is opened on the handheld device, the assessor *may be asked* (e.g., prompted) to identify the job 801 (e.g., *location*, customer name, date, type of job)." Ex. 1002, 9:54–56 (emphasis added). Barbosa also discloses that the response to this question regarding location information "may be provided by the handheld device automatically via a resident GPS module." *Id.* at 10:14–17. These disclosures in Barbosa teach the above limitation.[11]

Patent Owner's argument that at the time of Barbosa's filing execution of a device independent token could not acquire GPS information is misplaced. As discussed in Section II.B.2., claim 19 does not require that a device independent token do so.

Even if we had construed claim 19 to require that GPS information be acquired by the execution of device independent tokens, however, we would find that Barbosa at least suggests the above recited limitation. We credit Mr. Roman's testimony that the desirability of Java's device independence was well known to an ordinarily skilled artisan. Ex. 1005 ¶ 132. Bandera supports that testimony. Ex. 1004, 5:40–44; *see also id.* at 5:47–49. We also credit Mr. Roman's testimony that it would not have been difficult for an ordinarily skilled artisan to have preserved that device independence when acquiring GPS information by adding an API (Application Programmer's Interface) to the involved Java code. Ex. 1018 ¶ 17. The

[11] We do not rely upon Petitioner's cited disclosures of Smalltalk or C++ in making this finding.

near contemporaneous development of a standardized API for that purpose, JSR 179, supports that testimony. *Id.* ¶¶ 14–18 (citing Ex. 1019, 1). Therefore, we credit Mr. Roman's testimony that an ordinarily skilled artisan would have been motivated to add such an API to the involved Java code to provide device independence. Ex. 1018 ¶¶ 14–18.

As discussed above, Patent Owner argues that we should not consider Mr. Roman's testimony concerning Exhibit 1019 because that document published after the filing date of the parent non-provisional application for the '748 patent. PO Sur-Reply 3–4. Patent Owner, however, did not timely object to Exhibit 1019 or to Mr. Roman's testimony concerning that exhibit and did not move to exclude that exhibit or that testimony. Thus, any evidentiary objection by Patent Owner is waived. 37 C.F.R. § 42.64 (b)(1) and (c). Further, although challenges in IPRs must be based on prior art (e.g., cannot be based on unpatentability for lack of enablement under § 112), not every exhibit submitted has to be prior art. Petitioner here relies on Mr. Roman's testimony regarding the JSR 179 API, which cites Exhibit 1019 as evidence of the level or ordinary skill in the art (i.e., that developing an API to preserve complete device independence was within that level of skill). The near simultaneous development of the JSR 179 API is proper evidence for that purpose. In *Regents of University of California v. Broad Institute, Inc.*, the Federal Circuit explained:

> We have recognized that simultaneous invention may bear upon the obviousness analysis in two ways. *Monarch Knitting Mach. Corp. v. Sulzer Morat GmbH*, 139 F.3d 877, 883 (Fed. Cir. 1998). First, it is evidence of the level of skill in the art. *Id.* Second, it constitutes objective evidence that persons of ordinary skill in the art understood the problem and a solution to that problem. *Id.*

903 F.3d 1286, 1295 (Fed. Cir. 2018).

Here, Mr. Roman testifies that work on the JSV 179 API began in at least as early as March 2002. Ex. 1018 ¶ 15 (citing Ex. 1020, 1.) Relying on Exhibit 1019, Mr. Roman further testifies that API was for J2ME and GPS, and that API was made available shortly after the earliest priority date of the '748 patent.[12] Ex. 1018 ¶¶ 13–18. This testimony with its reliance on Exhibit 1019 is proper evidence for an obviousness analysis. *Geo. M. Martin Co. v. Alliance Mach. Sys. Int'l LLC*, 618 F.3d 1294, 1305 (Fed. Cir. 2010).

With respect to Patent Owner's arguments that Petitioner should have provided source code as part of its showing, source code is generally not needed to prove the description of an invention or its enablement in the prior art. For example, the challenged patent discloses no source code to describe or enable claim 19. *See* Ex. 1001; *In re Epstein*, 32 F.3d 1559, 1568 (Fed. Cir. 1994) (holding "the Board's observation that appellant did not provide the type of detail in his specification that he now argues is necessary in prior art references supports the Board's finding that one skilled in the art would have known how to implement the features of the references."). But we find that one argument by Petitioner would have required evidence, such as source code or Java reference manuals, to prove: that because Barbosa discloses that its program can be written in an object oriented language, such as Java, by itself means that Barbosa's questionnaire is tokenized, would have required supporting evidence, such as source code or Java reference

[12] The '748 patent claims the benefit of a provisional application filed on August 19, 2002. Ex. 1001 code (60). Exhibit 1019 has a copyright year of 2003. Ex. 1019, 3.

manuals, as proof. Pet. 20. In the absence of evidence from Java manuals or Java code, we were not persuaded by that argument by Petitioner. *See* Section II.C.2.b.i.1. Otherwise, we do not find that Petitioner needed to submit any source code or any additional reference manuals to support its arguments for claim 19. This challenge by Petitioner could be proven without such code. *See, e.g.*, Ex. 1001.

We find that Barbosa teaches the above recited limitation.

*ii. Other Limitations*

Patent Owner has not disputed that Barbosa teaches or suggests the preamble recitation of claim 19 nor the remaining limitations of claim 19. PO Resp. 16–18. We have reviewed that complete record and find that Petitioner has proven that Barbosa teaches or suggests the preamble recitation of claim 19[13] and all remaining limitations of claim 19. Pet. 18–30.

*iii. Conclusion*

We determine that Petitioner has proven by a preponderance of the evidence that claim 19 would have been obvious over Barbosa.

*c. Claim 20*

Claim 20, which depends from claim 19, recites "wherein the first user and the second user are a same user." Petitioner maps the first and second user recited by claim 19 to the same user in Barbosa. Pet. 28–30. Patent Owner does not dispute that Barbosa satisfies the above limitation. PO Resp. 18. After reviewing the parties' arguments and evidence, we find that Barbosa teaches the above limitation and determine that Petitioner has

[13] In light of this finding, we do not need to determine whether this preamble recitation constitutes a claim limitation.

proven by a preponderance of the evidence that claim 20 would have been obvious over Barbosa.

*d. Claim 21*

The recitations of claims 19 and 21 significantly overlap. Both claims recite "[a] method for managing data," and many limitations in the claim bodies are similar, including disputed limitations.

*i. Disputed Limitations*

The parties dispute whether Barbosa teaches or suggests three limitations of claim 21 ((a2), (a4i), (a4ii)), which are listed, with their corresponding limitations of claim 19 ((b), (d1), and (d2)), in the table below:

| **Disputed Limitations** | |
|---|---|
| **Claim 21** | **Claim 19** |
| receiving within said handheld computing device a transmission of a tokenized questionnaire, including at least one question requesting GPS coordinates and at least one additional question, said tokenized questionnaire comprising a plurality of device independent tokens | receiving within said handheld computing device a transmission of a tokenized questionnaire from said originating computer, said tokenized questionnaire including at least one question requesting location identifying information, said tokenized questionnaire comprising a plurality of device independent tokens; |
| executing at least a portion of said plurality of tokens comprising said questionnaire on 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 first user, and, |
| automatically entering the GPS coordinates into said questionnaire: | using said GPS to automatically obtain said location identifying information in response to said at least one question that requests location identifying information; |

PO Resp. 18–19.

The parties present the same arguments regarding the above limitations of claim 21 as for the corresponding limitations in claim 19. PO Resp. 18–19. For the reasons discussed in Section II.C.2.b., we resolved those disputes in favor of Petitioner.

As can be seen from the above table, the disputed limitations of claim 21 include a few recitations that their corresponding limitations of claim 19 do not. Even though those additional recitations are not disputed, for completeness, we address them below.

*(1) GPS Coordinates and an Additional Question*

As can be seen from the above table, claim 21 recites "at least one question requesting GPS coordinates and at least one additional question," whereas claim 19 recites "at least one question requesting location identifying information." Petitioner argues that Barbosa's questionnaire includes "one question requesting GPS coordinates" and "at least one additional question." Pet. 31. Petitioner relies on Barbosa's disclosure that "[o]nce a program is opened on the handheld device, the assessor may be asked (e.g., prompted) to identify the job 801 (e.g., location, customer name, date, type of job)." *Id.* at 31–32 (quoting Ex. 1002, 9:54–56) (emphasis omitted). Petitioner argues that Barbosa discloses identifying locations using GPS coordinates, quoting Barbosa's disclosure that "GPS coordinate[s] associated with the collection of data [is an] important attribute[]." *Id.* at 32 (quoting Ex. 1002, 12:30–32).

Petitioner further asserts that it would have been obvious to an ordinarily skilled artisan that GPS coordinates may have been entered in response to a question requesting them. *Id.* (citing Ex. 1005 ¶ 148). Further,

Petitioner argues that Barbosa discloses asking and receiving responses to additional questions, such as "customer name, date, type of job," and others, such as "ask[ing] the representative to identify the problem or type of assessment." *Id.* (quoting Ex. 1002, 6:59–67, 8:54–63, 9:54–56). Patent Owner does not dispute that Barbosa teaches or suggests a questionnaire that includes one question requesting GPS coordinates and at least one additional question. PO Resp. 18–19. After reviewing the evidence, we find that Petitioner has proven that Barbosa teaches or suggests that its questionnaire include one question requesting GPS coordinates and at least one additional question.

*(2) Automatically Entering GPS Coordinates*

As shown in the table above, claim 21 recites "automatically entering the GPS coordinates into said questionnaire," whereas claim 19 recites "using said GPS to automatically obtain location identifying information . . . ." Petitioner cites Barbosa's disclosure that "location information may be provided by the handheld device automatically via [the] resident GPS module." Pet. 27 (quoting Ex. 1002, 10:14–17), 32. In addition, Petitioner relies on its arguments above regarding Barbosa's disclosures of GPS coordinates. *Id.* at 32. After reviewing the evidence, we find that Petitioner has proven that Barbosa teaches or suggests "automatically entering the GPS coordinates into said questionnaire."

In sum, we find that Petitioner has proven that Barbosa teaches or suggests the disputed limitations of claim 21.

*ii. Other Limitations*

Patent Owner has not disputed that Barbosa teaches or suggests the preamble recitation of claim 21 or the remaining limitations of claim 21. PO

Resp. 18–19. After reviewing the record, we find that Petitioner has proven that Barbosa teaches or suggests the preamble recitation of claim 21[14] and the remaining limitations of claim 21.

*iii. Conclusion*

We determine that Petitioner has shown by a preponderance of the evidence that claim 21 would have been obvious over Barbosa.

*e. Claim 22*

Claim 22 depends from claim 21 and recites "wherein said central computer and said recipient computer are a same computer." Petitioner argues that Barbosa's remote server receives responses from the user's handheld devices and is, thus, a recipient computer. Pet. 30 (citing Ex. 1002, 7:54–56; 9:3–7; 9:38–40). Petitioner further argues that Barbosa's server "may be used as a centralized data collection and analysis facility for input received from more than one handheld device/user" and, thus, is also a central computer. *Id.* at 31 (quoting Ex. 1002, 8:46–48). Patent Owner does not dispute that Barbosa teaches the above limitation. PO Resp. 19. We find that Petitioner has proven that Barbosa teaches the above limitation and determine that Petitioner has shown by a preponderance of the evidence that claim 22 would have been obvious over Barbosa.

*f. Claim 1*

The recitations in claims 1 and 19 significantly overlap. Thus, for claim 1, both parties rely predominately on their analysis of claim 19.

[14] In light of this finding, we do not need to determine whether this preamble recitation constitutes a claim limitation.

*i. Disputed Limitations*

The disputed limitations of claim 1 ((b), (e), and (f)) with their corresponding limitations of claim 19 ((b), (d1), and (d2)) are set forth in the table below:

| **Disputed Limitations** | |
|---|---|
| **Claim 1** | **Claim 19** |
| tokenizing said questionnaire, thereby producing a plurality of device indifferent tokens representing said questionnaire | receiving within said handheld computing device a transmission of a tokenized questionnaire from said originating computer, said tokenized questionnaire including at least one question requesting location identifying information, said tokenized questionnaire comprising a plurality of device independent tokens; |
| when said remote computing device is at said location, executing at least a portion of said plurality of tokens representing said questionnaire at within said remote computing device to collect a response from a user | executing at least a portion of said plurality of tokens comprising said questionnaire on said handheld computing device to collect at least one response from a first user, and, |
| automatically entering the GPS coordinates into said questionnaire | using said GPS to automatically obtain said location identifying information in response to said at least one question that requests location identifying information; |

PO Resp. 20.

For the disputed limitations of claim 1, the parties rely on the arguments and evidence they presented for their corresponding limitations in claim 19. Pet. 36–37; PO Resp. 20–21. For the reasons described in Section II.C.2.b., we resolved those disputes in favor of Petitioner.

As can be seen from the above table, the disputed limitations of claim 1 include a few recitations that the corresponding limitations of claim 19 do not. Although the parties do not dispute that Barbosa teaches or suggests those additional recitations, we briefly address them.

*1. Device Indifferent Tokens*

As shown above, claim 1 recites "device indifferent tokens," whereas claim 19 recites "device independent tokens." For purposes of the obviousness challenges in this proceeding, however, both parties treat these terms as synonymous. Neither party has argued that there is any difference between the terms. Pet. 36; PO Resp. 20–21. And, for the "device indifferent tokens" of claim 1, both parties rely on their arguments concerning the "device independent tokens" of claim 19. Pet. 36; PO Resp. 20–21. Upon reviewing the Specification, we see no disclosed distinction between device independent tokens and device indifferent tokens. *See also* Section II.B.2. Thus, we find that Petitioner has proven that Barbosa teaches or suggests the "device indifference tokens" of claim 1 for the same reasons Barbosa teaches or suggests the "device independent tokens" of claim 19. *See* Section II.C.2.b.i.3.

*2. Said Location*

As can be seen from the above table, claim 1 also recites that the execution of at least a plurality of said tokens occurs when the remote computing device is at said location. The antecedent basis for "said location" is in the limitation of "creating a questionnaire comprising a series of questions customized for *a location*." Petitioner sets forth disclosures that teach or suggest executing the plurality of tokens in such a location when Petitioner addresses of the "creating a questionnaire" limitation of claim 1.

Pet. 36. Thus, we find that that Petitioner has proven that Barbosa teaches or suggests the above limitation.

*3. GPS Coordinates*

As can also be seen from the above table, claim 1 recites "automatically entering the GPS coordinates into said questionnaire." We addressed that limitation in our discussion of claim 21. *See* Section II.C.d.i.2.

In sum, we find that that Petitioner has proven that Barbosa teaches or suggests the disputed limitations of claim 1.

*ii. Other Limitations*

We have reviewed the record and find that Petitioner has proven that Barbosa teaches or suggests the preamble recitation of claim 1[15] and the remaining limitations of claim 1. *See* Pet. 36–37.

*iii. Conclusion*

We determine that Petitioner has proven by a preponderance of the evidence that claim 1 would have been obvious over Barbosa.

*3. Asserted Obviousness of Claims 1 and 19–22 over Barbosa and Bandera*

Petitioner argues that claims 1 and 19–22 would have been obvious Barbosa and Bandera. Pet. 38.

*a. Bandera*

Bandera discloses a system for providing time and location specific advertising via the Internet. Ex. 1004, code (54). Bandera's system selects an advertising object to be displayed within a web page based on the

[15] In light of this finding, we do not need to determine whether this preamble recitation is a claim limitation.

geographic location of the user or the time of day. *Id.* at 2:35–41. Bandera further discloses that "[c]omputer program code for carrying out operations of the present invention is preferably written in an object oriented programming language such as JAVA®, Smalltalk, or C++." *Id.* at 5:26–28.

*b. Analysis*

Petitioner presents essentially the same analysis for this ground as for the ground based on Barbosa alone with the exception that Petitioner relies on Bandera as an asserted prior art reference for this ground, whereas for the Barbosa-alone ground, Petitioner relies on Bandera solely as evidence of the knowledge of an ordinarily skilled artisan. Pet. 38–40. In particular, for the Barbosa-alone ground, Petitioner relies on Bandera as evidence that an ordinarily skilled artisan would have recognized that Java is a machine-independent and operating-system-independent language. *Id.* at 23–24. For the Barbosa-Bandera ground, Petitioner combines Barbosa's teachings of its assessment system, which utilizes Java, with Bandera's teaching of the machine independent nature of Java. *Id.* at 39–40. Petitioner addresses an ordinary artisan's motivation to combine Barbosa's assessment system with Bandera's Java teachings. *Id.* at 38–39. Petitioner also addresses Barbosa's and Bandera's teachings of device independent tokens. *Id.* at 39–40.

*1. Motivation to Combine*

Petitioner argues that an ordinarily skilled artisan would have combined Barbosa's teachings of its assessment system with Bandera's teachings regarding Java. Petitioner asserts that Barbosa and Bandera are in the same field of endeavor, as both relate to providing location based services to mobile devices. Pet. 38 (citing Ex. 1004, 2:13–15 (disclosing "hand-held devices" in the background of the invention)). Petitioner further

asserts that Barbosa discloses that a user's handheld device may collect a user's GPS location, transmit it to a server along with other data, and receive a report. *Id.* Further, Petitioner argues that "[l]ikewise, Bandera discloses that a mobile web client may collect a user's GPS location, transmit it to a server, and receive targeted advertisements based on the user's GPS location." *Id.* (citing Ex. 1004, code (57), 2:63–64, 4:46–47). According to Petitioner, Bandera expressly discloses the use of GPS for location-based advertising. *Id.* at 39 (citing Ex. 1004, 6:40–42). Petitioner continues, arguing that, thus, combining Barbosa and Bandera to use a GPS with location-based advertising and a computer language that was device-independent (e.g., Java) would have been within the ordinary knowledge, creativity, or common sense of an ordinarily skilled artisan at the time of the alleged invention. *Id.* Petitioner also argues that there is also a design incentive to make use of GPS for location-based advertising, as well as a design incentive to use a computer language that is device independent, because each of these disclosed solutions would make a device more effective and efficient and make use of known technology which solved similar problems. *Id.* Further, Petitioner asserts that Bandera was developed at IBM, which was an industry leader that an ordinarily skilled artisan would have looked at for its teachings. *Id.* Petitioner's arguments are supported by the declaration testimony of Mr. Roman. Ex. 1005 ¶¶ 169–171 (cited by Pet. 38–39).

Patent Owner argues that an ordinarily skilled artisan would not have combined Barbosa and Bandera because Bandera's device uses JVM whereas the handheld device of Barbosa was limited to Java standard KVM. PO Resp. 22. Patent Owner further argues that KVM was strictly limited in

its capabilities. *Id.* citing Ex. 2002, 22; Ex. 2006, ¶ 44. Patent Owner asserts that, as a result, the combination of Barbosa and Bandera would be inoperable because of Bandera's reliance on JVM when handheld devices would have to run on KVM. *Id.* Other than alleged incompatibility of the form of Java each reference would utilize, Patent Owner does not dispute Petitioner's arguments regarding a motivation to combine. *Id.*

After reviewing the record, we find that Petitioner has proven that an ordinarily skilled artisan would have combined the Barbosa's teachings regarding its assessment system with Bandera's Java teachings. First, Barbosa discloses the use of Java for a handheld device that utilizes GPS. Ex. 1002, 12:14–18, 12:45–48; Ex. 1004, 3:13–18, 3:59–63; Ex. 1005 ¶ 170. Bandera discloses the use of Java for a mobile device that utilizes GPS. Thus, an ordinarily skilled artisan would consult Bandera's teachings regarding Java to understand how to utilize Java in Barbosa's system. Ex. 1005 ¶ 170. And an ordinarily skilled artisan would understand the value of the disclosed device independence of Java. *Id.* Further, Bandera discloses how Java and GPS can be used to provide location-based advertising, which provides another reason to combine Barbosa and Bandera's teachings. Ex. 1004, 6:40–42; Ex. 1005 ¶ 170. Further, as mentioned, the only dispute that Patent Owner raises regarding combining Barbosa and Bandera is that Barbosa is purportedly limited to KVM. PO Resp. 22. As discussed in Section II.C.2.i.1., we disagree with Patent Owner's argument that Barbosa is limited to low-end consumer devices that could only run KVM. We find Petitioner has proven that an ordinarily skilled artisan would have combined Barbosa's and Bandera's teachings.

*2. Device Independent Tokens*

For its Barbosa-Bandera ground, Petitioner relies on its showing of obviousness over Barbosa alone for all but one limitation of claims 1 and 19–22. Pet. 39–40. For the Barbosa-Bandera ground, Petitioner separately addresses only the limitation of "device independent tokens." *Id.*

Petitioner argues that an ordinarily skilled artisan would have found device independent tokens to have been obvious in view of Bandera's disclosure of Java. Pet. 39–40. Petitioner quotes Bandera's description that "JAVA® is a portable and architecturally neutral language," and "JAVA® source code is compiled into a machine-independent format that can be run on any machine with a JAVA® runtime system known as the JAVA® Virtual Machine (JVM)." *Id.* at 40 (quoting Ex. 1004, 5:40–44) (emphasis omitted). Petitioner further asserts that "[n]ot only is Java code machine independent, it also is independent of the operating system." *Id.* Petitioner quotes Bandera's disclosure that "[m]achines running under diverse operating systems, including UNIX, Windows NT, and MacIntosh having a JVM can execute the same JAVA® program." *Id.* (quoting 5:47–49). Petitioner concludes that "to the extent Barbosa's disclosure that its program was implemented using Java does not expressly disclose or render obvious the 'device independent tokens' limitation, it would have been obvious over Barbosa in view of Bandera." *Id.* (citing Ex. 1005 ¶ 171).

Patent Owner disagrees, arguing that Bandera discloses JVM, whereas, at the time of Barbosa's filing, wireless devices used the KVM. PO Resp. 21–22 (citing Ex. 2002, 14–15, 22, 37, 39; Ex. 2006 ¶¶ 44–45). As discussed in Section II.C.2.b.1., we disagree with Patent Owner's argument that wireless devices were limited to the KVM.

After reviewing the arguments and evidence, we agree with Petitioner's analysis regarding "device independent tokens" and find that the Petitioner has proven that the proposed combination of Barbosa and Bandera teaches or suggests such tokens. We also find, based on Petitioner's showing for its ground based on Barbosa alone, that Petitioner has proven that the proposed combination of Barbosa and Bandera teaches or suggests all other limitations of claims 1 and 19–22.

As discussed in Section II.B.2., we determined that claims 1 and 19–22 do not require that GPS be acquired or utilized by the execution of device indifferent or device independent tokens. We also found that if the claims were construed so as to require that GPS be acquired or utilized by the execution of device indifferent or device independent tokens, Barbosa suggested such a limitation. *See* Section II.C.2.b.5. We note, however, for this asserted ground (based on Barbosa and Bandera), the suggestion for device independent tokens that provide GPS capabilities is even stronger due to Bandera's express disclosure of the desirability of device and platform independence of Java. Ex. 1004, 5:40–49; Ex. 1005 ¶ 132. This disclosure would further suggest modifying Java code (by e.g., adding an API) to preserve the code's device and platform independence when accessing GPS functions. *See* Section II.C.2.b.5.

*3. Conclusion*

Petitioner has shown by a preponderance of the evidence that claims 1 and 19–22 would have been obvious over Barbosa and Bandera.

*4. Asserted Obviousness of Claim 7 over Barbosa and Falls*

Petitioner asserts that claim 7 would have been obvious over the combination of Barbosa and Falls. Pet. 40–45.

*a. Falls*

Falls provides a system and method for facilitating disconnected mobile computing. Ex. 1017, 3:15–17. Falls discloses that, with its system, prior to disconnection of a mobile computer, network administrators or users select data that should be copied from a network to a mobile computer by identifying one or more target database subtrees. *Id.* at 3:17–21. Further, Falls discloses that, during disconnected operation of the mobile computer, its system presents the user with a "virtual network" environment that is consistent in use and appearance with the selected portion of the actual network. *Id*. at 3:21–25.

*b. Claim 7*

We find that Petitioner has not proven that the combination of Barbosa and Falls would teach or suggest the following limitation of claim 7:

> (b) automatically transferring said designed questionnaire to at least one loosely networked computer

*i. Arguments in the Petition and Reply*

In the Petition, Petitioner argues that Barbosa teaches the automatic transfer of its questionnaire. Pet. 43 ("The transfer occurs automatically.") Petitioner argues that Barbosa discloses transferring designed questions to device 10. *Id.* Further, Petitioner argues that the transfer of these designed questions to device 10 occurs automatically. *Id.* at 43. But for the purportedly automatic nature of this transfer, Petitioner provides no analysis in the Petition. *Id.* Instead, Petitioner merely states: "[t]he transfer occurs automatically as disclosed, for example, at 3:28–43; 6:24–39; 6:64–67." *Id.* The purportedly automatic transfer of a questionnaire to device 10, however, is not evident from those cited passages of Barbosa, which read as follows:

> It is another aspect of the present invention to provide methods for field assessment data synchronization and/or delivery using wireless capabilities resident in handheld personal computing devices. Data may be synchronized with a server over a network using wireless radio transmission, or directly to a computer workstation using wireless infrared or radio transmission or connected means (e.g., modems, cradles, docking stations).

(Ex. 1002, 3:28–36.)

> It is another aspect of the present invention to provide for two-way communication between remote computing means (e.g., servers, desktop computers) and handheld data management devices to facilitate real-time access to remote programs, assistance and/or information related to the field assessment being undertaken by using a handheld data management device user.

(Ex. 1002, 3:37–43)

> Communications module 42 provides wireless realtime access to servers and personnel in support of assessments, and may also provide more traditional information available over networks, (e.g., e-mail, chat, Intranet and Internet information). Preferably, no plugging in or dialing up i[s] needed through integration of the communication module 42 into a handheld device.
>
> As shown in FIG. 4, the device 10 can preferably communicate with a PC 36 through an infrared communications link 38 to exchange and update information both ways. This feature makes it particularly easy to update and change personal schedules as needed. The device 10 may include an integrated modem 40 to provide data transfer functions and for remote connectivity. This feature allows a person (such as a supervisor, counselor or service representative) remote from the user to provide tasks, answers to queries, notes and other information for use and display on the users device 10 using standard telecommunications technology (e.g., wired and wireless GSM, CDMA, CDPD, and paging networks).

(Ex. 1002, 6:21–39.)

> Interactivity may also be provided to remote resources when two-way communication is provided between the device and a remote server and/or support representative.

(Ex. 1002, 6:64–67).

The cited testimony from Mr. Roman's original declaration also fails to explain why the transfer is automatic. Instead, Mr. Roman merely testifies:

> The transfer occurs automatically as disclosed, for example, at 3:28–43; 6:24–39 ("Preferably, no plugging in or dialing i[s] needed through integration of the communication module 42 into a handheld device"); 6:64–67 ("Interactivity may also be provided to remote resources when two-way communication is provided between the device and a remote server and/or support representative.").

Ex. 1005 ¶ 176.

In our Institution Decision, we identified issues concerning the sufficiency of Petitioner's showing of the recited automatic transfer. Inst. Dec. 42–44. In the Patent Owner Response, Patent Owner disputes the sufficiency of that showing, citing our Institution Decision. PO Resp. 23. In its Reply, Petitioner does not persuasively explain why its Petition proves that Barbosa teaches that automatic transfer. Pet. Reply 12–14. Instead, Petitioner argues the following additional disclosures in Barbosa teach or suggest that transfer: (i) column 10, lines 32–42 and 59–67; (ii) column 11, lines 29–40 and 53–62; and (iii) column 12, lines 11–32. *Id.*

*ii. Petitioner's Reply Arguments Are Untimely*

Having failed to establish that the disclosures identified in its Petition demonstrate that Barbosa disclosed the automatic transfer of a questionnaire,

it was not within the proper scope of a reply to (i) introduce and rely on new disclosures to establish the automatic transfer and (ii) argue for the first time that the recited automatic transfer was rendered obvious by Barbosa.[16] *See Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369–70 (Fed. Cir. 2016) ("It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify 'with particularity' the 'evidence that supports the grounds for the challenge to each claim.' 35 U.S.C. § 312(a)(3)."); 37 C.F.R. § 42.23(b) ("All arguments for the relief requested in a motion must be made in the motion. A reply may only respond to arguments raised in the corresponding opposition or patent owner response."). Therefore, we will not consider the arguments Petitioner presents for the recited automatic transfer in its Reply, and, given the insufficient proof presented with the Petition, we find Petitioner has not proven that Barbosa and Falls teach, suggest, or render obvious the above limitation.

*ii. Even if We Were to Consider Petitioner's Reply Arguments, Petitioner's Showing Would Still Be Insufficient*

Even if we were to consider the arguments and evidence Petitioner presents in its Reply, we would still find that Petitioner has not proven that Barbosa teaches, suggests, or renders obvious the above limitation. In its

[16] The Petition presented an obviousness argument regarding the loosely networked computers in the above limitation. Pet. 44. The Petition, however, only argued that the automatic transfer of the recited questionnaire was disclosed by Barbosa. *Id.* at 43. The Petition did not present any analysis as to why such a transfer would have been obvious over Barbosa. *Id.*

Reply, Petitioner relies on the testimony of Mr. Roman interpreting the above-cited passages. Pet. Reply 13–15.

Citing column 11, lines 29–40 of Barbosa, Mr. Roman testifies that Barbosa discloses a method for distributing inventory tracking and ordering information. Ex. 1018 ¶ 25. Mr. Roman specifically cites Barbosa's disclosure that "[t]he technician may coordinate inventory needs with the company automatically using this method." *Id.* (quoting Ex. 1002, 11:39–40). Mr. Roman testifies, that "this disclosure teaches automatic transferring of an updated questionnaire (here, inventory status questions) to remotes." Ex. 1018 ¶ 25. Mr. Roman further indicates, that "by automatically providing updated inventory tracking questionnaire to the remotes, Barbosa's system ensures 'that no more inventory than is needed is taken to the field.'" Pet. 13–14; Ex. 1018 ¶ 25.

Mr. Roman, however, does not persuasively explain why the described updating of inventory tracking and ordering information constitutes a transfer of the recited questionnaire. Ex. 1018 ¶ 25. Mr. Roman conclusorily maps the recited questionnaire to inventory status questions; but conclusory testimony is entitled to little weight. Ex. 1018 ¶ 25. *Magnum Oil*, 829 F.3d at 1380; 37 C.F.R. § 42.65(a). Further, the recited questionnaire in claim 7 is executable, as claim 7 additionally recites "executing said questionnaire." Mr. Roman does not explain how the mere transfer of questions, which could be provided merely as text, discloses the transfer of an executable questionnaire. Ex. 1018 ¶ 25. Thus, we do not credit Mr. Roman's mapping.

Additionally, according to Mr. Roman, it would have been obvious to transfer the updated inventory questions to the handheld device

automatically to ensure efficiency in communications. Ex. 1018 ¶ 25. But even if we were to afford weight to that testimony, it would merely establish that questions were automatically transferred to the handheld, not that an executable questionnaire was. Thus, we do not credit Mr. Roman's testimony that column 11, lines 29–40 of Barbosa teach or render obvious the recited automatic transfer of a questionnaire.

Citing column 10, lines 32–42 of Barbosa, Mr. Roman testifies that "Barbosa teaches that a 'worker's handheld device (or device assigned to the worker for the shift) may be synchronized 901 with a server to receive an updated template containing tasks for the worker at the beginning of every work shift.'" Ex. 1018 ¶ 26 (quoting Ex. 1002, 10:32–42). According to Mr. Roman, an ordinarily skilled artisan would have appreciated that this disclosed process is automatic. *Id.* (citing Ex. 1002, 10:59–69). Mr. Roman further testifies that "it would have been obvious to transfer the updated or template questionnaire automatically to the workers." *Id.* (citing Ex. 1002, 10:59–67).

Mr. Roman, however, provides no persuasive evidence or analysis for his mapping of the updated template as a tokenized questionnaire. *Id.* As discussed above, the recited questionnaire is executable, yet Mr. Roman provides no evidence that this updated template is executable, rather than merely text. *Id.* Nor does Mr. Roman provide any other evidence to support a finding that this updated template is the recited questionnaire. *Id.* Thus, we do not credit Mr. Roman's testimony that column 10, lines 32–42 or lines 59–67 of Barbosa teach or render obvious the recited automatic transfer of a questionnaire. *See Magnum Oil*, 829 F.3d at 1380; 37 C.F.R. § 42.65(a).

Mr. Roman also testifies that additional disclosures of automatic transferring of questions to remote network devices is found in Barbosa at column 11, lines 53–62 and column 12, lines 11–32. Ex. 1018 ¶ 27. According to Mr. Roman, in both of these examples, checklists used for data collection are updated and synchronized across remote devices. *Id.* Mr. Roman testifies that an ordinarily skilled artisan would understand that this updating or synchronization of the template or questionnaire is done automatically, given Barbosa's express teaching regarding the importance of coordinating among remote users in the field. *Id.* (citing Ex. 1002, 11:55–62). Mr. Roman further testifies that transferring such information automatically would have been obvious to skilled artisans so as to ensure real-time coordination of efforts, a key concern addressed by Barbosa. *Id.* (citing Ex. 1002, 11:55–62). We do not afford weight to this testimony. Mr. Roman maps the recited questionnaire to the disclosed checklists without providing any evidence or analysis that such checklists are the recited questionnaire. *Magnum Oil*, 829 F.3d at 1380; 37 C.F.R. § 42.65(a).

Thus, even if we were to consider the arguments and evidence Petitioner presents in its Reply for the above limitation, we would still find that Petitioner has not proven that Barbosa teaches, suggests, or renders obvious the above limitation. Accordingly, Petitioner has not provided sufficient evidence that the combination of Barbosa and Fields teaches, suggests, or renders obvious the above limitation.

In sum, Petitioner has not shown by a preponderance of the evidence that claim 7 would have been obvious over Barbosa and Fields.

*5. Asserted Obviousness of Claims 1, 2, 5, and 19–22 over Hancock*

Petitioner argues that each of claims 1, 2, 5, and 19–22 would have been obvious over Hancock. Pet. 45–68.

*a. Hancock*

Hancock discloses an internet based geographic location referencing system. Ex. 1003, code (57). The disclosed system provides informational services to users based on their geographic location. *Id.* at 1:15–20. In Hancock, Go2 Application program 1500 is used in portable-computing devices 1302. *Id.* at 26:30–34 (referring to Fig. 15). Go2 Application 1500 includes web browser component 1502. *Id.*

*b. Device Independent Tokens*

The parties dispute whether Hancock teaches, suggests, or renders obvious the device independent tokens recited in independent claims 1, 19, and 21.[17] PO Resp. 23; Pet. Reply 17–18. Petitioner argues that it would have been obvious to modify Hancock to provide device independent tokens. Pet. 51–52. Petitioner maps the questionnaire recited in claims 1, 19, and 21 to Hancock's Go2 Application. Pet. 47. Petitioner argues that "Hancock is silent regarding a programming language used to create the Go2 Application." Pet. 51. Petitioner asserts, however, that an ordinarily skilled artisan would have understood that Java provides device independency. *Id.*

[17] As discussed in Section II.B.2., claim 1 recites device indifferent tokens, but the parties treat that term as being synonymous with the term device independent tokens.

(citing Ex. 1005 ¶¶ 132–133, 195). According to Petitioner, as a result, "it would have been an obvious design choice to [an ordinarily skilled artisan] that the Go2 Application could have been implemented using Java. *Id.* Petitioner further asserts that "because it would have been an obvious design choice to implement the Go2 Application using Java," and "because [an ordinarily skilled artisan] would have understood that Java provides device-independent code, an [ordinarily skilled artisan] would have found it obvious to implement the Go2 Application using Java such that it would include a plurality of device independent tokens." *Id.* at 51–52.

In our Institution Decision, we identified issues concerning the sufficiency of Petitioner's showing for device independent tokens. Inst. Dec. 47–48.

In its Response, Patent Owner argues that Petitioner has not shown that Hancock discloses the use of device independent tokens. PO Resp. 23. In its Reply, Petitioner argues that it did not assert that Hancock discloses device independent tokens, but rather Hancock renders them obvious. Pet. Reply 17. Petitioner argues that its expert explained in detail how device independent tokens would have been an obvious design choice. *Id.* at 17–18. Petitioner also argues that its expert testimony is unrebutted and, thus, we should find in its favor in this challenge. *Id.* at 18.

We find that Petitioner has not met its burden of proving that this recited use of device independent tokens would have been obvious over Hancock. Mr. Roman's testimony, that it would have been an obvious design choice to use Java in Hancock's Go2 Application, is conclusory. Ex. 1005 ¶ 195. Mr. Roman provides no support for his opinion that an ordinarily skilled artisan would have been aware of a design need and

market pressure to implement applications using a program that provides device independency. *Id.* Similarly, Mr. Roman provides no support for his testimony that Java is one of a limited number of programming languages that an ordinarily skilled artisan would have considered for implementing an application such as the Go2 Application. *Id.* Mr. Roman further does not explain what he means by a limited number of programming languages (e.g., 3, 10, 100) that would be considered. *Id.* In light of the conclusory nature of this testimony, we do not credit it, even though Patent Owner did not submit contrary expert testimony. *Magnum Oil*, 829 F.3d at 1380; 37 C.F.R. § 42.65(a).

We find that Petitioner has not proven that Hancock teaches, suggests, or renders obvious "device independent tokens." Thus, we determine that Petitioner has not proven that claims 1, 2, 5, and 19–22 would have been obvious over Hancock.

*6. Asserted Obviousness of Claims 1, 2, 5, and 19–22 over Hancock and Bandera*

Petitioner argues that claims 1, 2, 5, and 19–22 would have been obvious over the combination of Hancock and Bandera. Pet. 68. Petitioner sets forth its arguments and evidence as to why the teachings of these two references would combined and would teach or suggest all limitations of claims 1, 2, 5, and 19–22. *Id.* at 45–71. Patent Owner disputes the sufficiency of this showing. PO Resp. 23–25; PO Sur-Reply 19. After reviewing the parties' arguments and evidence, we agree with Petitioner's showing for this challenge. Pet. 45–71. We address the disputes between the parties below.

Patent Owner does not dispute that an ordinarily skilled artisan would have combined the teachings of these two references, and Patent Owner does

not specifically identify any limitations of the claims that it contends are not taught or suggested by Hancock and Bandera. PO Resp. 24. Patent Owner, however, argues that Bandera teaches only JVM, whereas handheld devices at the time used KVM. *Id.* (citing Ex. 2006 ¶¶ 87–90). As discussed in Section II.C.2.i.1, we resolved this disputed issue in favor of Petitioner.

Patent Owner also argues that Bandera does not teach developing a tokenized questionnaire comprised of device independent tokens at least some of which are executable. *Id.* Petitioner, however, did not rely on Bandera alone for that limitation. In particular, Petitioner relies on Hancock for teaching or suggesting a tokenized questionnaire, and Bandera for teaching the use of Java, which provides device independence. Pet. 47–49; 70. Thus, the argument that Bandera alone does not teach a tokenized questionnaire with device independent tokens is not responsive to the assertions made by Petitioner. *In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012) (citing *In re Keller*, 642 F.2d 413, 425–26 (CCPA 1981)).

Patent Owner further argues that Hancock does not disclose a tokenized questionnaire because it discloses using C++, which would not provide device independence. PO Resp. 24. In this asserted ground, however, Petitioner relies on Bandera's teachings of Java as suggesting making the tokenized questionnaire device independent, not on Hancock's disclosure of C++. Pet. 70–71.

Thus, we resolve the disputed issues for this challenge in favor of Petitioner, and we determine that Petitioner has proven that claims 1, 2, 5, and 19–22 would have been obvious over Hancock and Bandera.

*7. Asserted Obviousness of Claim 7 over Hancock and Falls*

Petitioner argues that claim 7 would have been obvious over Hancock and Falls. Pet. 42. After reviewing the parties' arguments and evidence, we find that Petitioner has not proven the combination of Hancock and Falls teaches, suggests, or renders obvious the following limitation:

> (b) automatically transferring said designed questionnaire to at least one loosely networked computer

*i. Arguments in the Petition and Reply*

The Petition does not sufficiently demonstrate that Hancock and Falls teach or suggest *automatically* transferring a designed questionnaire to what Petitioner argues is a loosely networked computer. Pet. 73–74. In its discussion of Hancock's teachings regarding this automatic transfer, Petitioner in the Petition does not address how any transfer of a designed questionnaire in Hancock is automatic. Petitioner states the following:

> As explained in VII.D.i.B–C, Hancock discloses transferring the designed questions to at least one computer having a GPS integral thereto. See, e.g., Ex. 1003, Abstract; Ex. 1005 ¶ 238.
>
> Hancock addresses services provided via the Internet to users in a mobile environment. See e.g., Ex. 1003, Abstract. As previously discussed, it was well known at the time that such an environment was "loosely networked" because unreliable wireless connections intermittently disconnected. While Hancock does not provide express teachings directed to handling intermittent network connections, as explained in VII.C.ii.C, Falls provides such additional details for dealing with intermittent connections in such environments, disclosing a more specific teaching of a loosely connected network. Ex. 1005 ¶[¶] 239–40.
>
> Accordingly, to the extent Hancock's disclosure does not disclose or render obvious the "loosely networked" limitation, it

> would have been obvious through Hancock in view of Falls. Ex. 1005 ¶ 241.

Pet. 73 (emphases omitted).

The cited paragraphs of Mr. Roman's original declaration also do not address how Hancock teaches or suggests making any transfer of a designed questionnaire to device 10 automatically. Mr. Roman testifies that Hancock describes automatically transmitting an electronic data packet to the server. Ex. 1005 ¶ 238. Claim 7, however, requires that the transfer be to the loosely networked computer, which Petitioner maps to device 10. Further, Mr. Roman maps the recited questionnaire to the Go2 Application software. Ex. 1005 ¶ 191. Mr. Roman cites Hancock Figure 18 as disclosing the transfer of this software to the handheld device. *Id.* ¶ 190. However, steps 1806, 1808, 1824, and 1811 of Hancock Figure 18 indicate that the transfer of the Go2 Application software to the handheld device is not automatic—the user is queried and must agree to the transfer before the transfer occurs. Ex. 1003, Fig. 18.

In our Institution Decision, we noted the above issues with Petitioner's showing. Inst. Dec. 51. In the Patent Owner Response, Patent Owner identified similar issues. PO Resp. 25.

In its Reply, Petitioner does not persuasively explain why the teachings it cited in its Petition teach the above limitation. Pet. Reply 20–23. Instead, Petitioner argues that additional disclosures in Hancock teach or suggest the limitation. *Id.*

*ii. Petitioner's Reply Arguments Were Untimely*

Having failed to establish that the disclosures identified in its Petition demonstrate that Hancock disclosed the automatic transfer of a questionnaire, it was not within the proper scope of Petitioner's Reply to (i)

rely on different disclosures and (ii) contend for the first time that the recited automatic transfer was rendered obvious by Hancock. *Intelligent Bio-Systems*, 821 F.3d at 1369–70; 37 C.F.R. § 42.23(b). Thus, we will not consider the arguments Petitioner presents in its Reply regarding this recitation. And given the insufficient proof provided with the Petition, we find Petitioner has not proven that Barbosa and Falls teach, suggest, or render obvious the above limitation.

*iii. Even if We Were to Consider Petitioner's Reply Arguments, Petitioner's Showing Would Still Be Insufficient*

Even if we were to consider the arguments and evidence Petitioner presents in its Reply, we would still find that Petitioner has not proven that the combination of Hancock and Falls teaches, suggests, or renders obvious the above limitation.

In the Reply, Petitioner argues that Hancock has numerous disclosures of the recited automatic transfer, citing the reply testimony of Mr. Roman. Pet. Reply 21. Mr. Roman testifies that Hancock teaches transferring questions requesting a user's location as well as questions regarding other location-based selections. Ex. 1018 ¶ 35. Mr. Roman further testifies that these questions are transferred automatically and that Hancock describes each of its preferred embodiments as an automatic location system. *Id.* (citing Ex. 1003, 23:30–34). Mr. Roman further testifies that Hancock describes an automatic location data collection process with an endless loop in which a server continuously asks a client for updated location information. *Id.* (citing Ex. 1003, 31:65–32:27). Mr. Roman quotes Hancock's disclosure that its server:

> automatically determin[es] the location of the client. In one embodiment, the client automatically advises the server of its

> current location via a transmission of an electronic data packet or "handshake" upon connection. The server uses this information to perform a database query to retrieve information that is customized for the particular location.

*Id.* (quoting Ex. 1003, 3:9–15). Mr. Roman further testifies that an ordinarily skilled artisan would appreciate that this "handshake" is used to automatically transfer a query to the client device requesting its location, and Hancock makes clear that questions and answers regarding a user's locations are exchanged automatically. *Id.* (citing Ex. 1003, 3:9–15; 31:65–32:27, 3:56–58).

According to Mr. Roman, Hancock teaches further location-specific questions may be automatically transferred. Ex. 1018 ¶ 36. Mr. Roman testifies that Hancock teaches a user interface application with location-based questions provided via a web-browser. *Id.* (citing Ex. 1003, 26:30–60). Mr. Roman further testifies that in connection with that application, Hancock teaches automatically transferring location-based questions used to "formulate a subsequent on-line database query." *Id.* (citing Ex. 1003, 28:49–56). According to Mr. Roman, further location-based questions may be automatically transferred to allow the user to refine database queries. *Id.* (citing Ex. 1003, 28:66–29:10).

Mr. Roman also testifies that Hancock further teaches automatically transferring, via its application, questions related to user preferences that are "entered one time and are not changed for every database query to minimize input requirements." *Id.*, Ex. 1003, 30:1–9. Mr. Roman then opines that given Hancock's teachings of "automatic location data collection" and its automatic transmission of location-based questions (i.e., over a web-based

interface or application), a POSITA would appreciate that Hancock discloses claim 7's "automatically transferring" limitation. Ex. 1018, ¶ 36.

We do not afford weight to that opinion, however, because Mr. Roman does not explain how the automatic transfer of questions, which could be in text format, discloses the transfer of questionnaire that is executable.

Mr. Roman further testifies that such automatic transferring would have been obvious based on Hancock. Pet. Reply 22. Mr. Roman testifies that Hancock describes each of its preferred embodiments of Figures 13–22 as an automatic location system. *Id.* (citing Ex. 1003, 23:30–34). Further Mr. Roman testifies that Hancock teaches that reducing user interaction with its system is a key consideration of its invention, given the mobile nature of the client devices. *Id.* (citing Ex. 1003, 1:29–38, 3:41–45, 3:65–67; Ex. 1018 ¶ 37). According to Mr. Roman, as automatically transferring questionnaire information reduced a user's need to interface with Hancock's software, an ordinarily skilled artisan would appreciate the claimed automatic transfer is at least obvious in light of Hancock because an automated transfer would enable location-based information with minimal user interaction. *Id.* (citing Ex. 1018 ¶ 37).

We also do not credit this testimony by Mr. Roman. This testimony merely addresses why an automatic transfer of *questions* might be obvious, not why the automatic transfer of an *executable questionnaire* would be.

Mr. Roman further testifies that, in the embodiment of Figure 18 of Hancock, it would have been obvious to remove user prompts before questions are transferred to avoid "dangerous" user interactions, thereby making the transfer of Figure 18 automatic. Ex. 1018 ¶ 37 (citing Ex. 1003,

3:42–45). We do not credit that opinion. Mr. Roman indicates that Hancock's teachings of the need to avoid "dangerous" interactions would cause an ordinarily skilled artisan to remove the user prompt in Figure 18, but he not explain why Hancock, which is the source of the concern for "dangerous interactions," would teach an ordinarily skilled artisan to use such a prompt if it involved one of the dangerous interactions that Hancock believed should be avoided. *Id.* Thus, we find that testimony to be unpersuasive.

We find that, even if we consider Petitioner's Reply arguments and evidence, Petitioner would still have not provided sufficient evidence that Hancock teaches, suggests, or renders obvious the above limitation. Thus, we determine that Petitioner has not proven that Hancock and Falls teach, suggest, or render obvious the above limitation. And Petitioner has not shown by a preponderance of the evidence that claim 7 would have been obvious over Hancock and Falls.

*D. Constitutional Challenge*

Patent Owner argues the Board lacks jurisdiction to conduct *inter partes* review of the '748 patent because the "appointments of administrative patent judges [APJs] violate the Appointments Clause of Article II of the United States Constitution. PO Resp. 25–26. We decline to address Patent Owner's constitutional challenge because it has been addressed by the Federal Circuit in *Arthrex, Inc. v Smith & Nephew, Inc*., 941 F.3d 1320, 1340 (Fed. Cir. 2019) ("we see the impact of this case as limited to those cases where final written decisions were issued and where litigants present an Appointments Clause challenge on appeal.").

## III. CONCLUSION[18]

In summary, we make the following determinations:

| Claims | 35 U.S.C. § | Reference(s) | Claims Shown Unpatentable | Claims Not Shown Unpatentable |
|---|---|---|---|---|
| 1, 19–22 | 103(a) | Barbosa | 1, 19–22 | |
| 1, 19–22 | 103(a) | Barbosa, Bandera | 1, 19–22 | |
| 7 | 103(a) | Barbosa, Falls | | 7 |
| 1, 2, 5, 19–22 | 103(a) | Hancock | | 1, 2, 5, 19–22 |
| 1, 2, 5, 19–22 | 103(a) | Hancock, Bandera | 1, 2, 5, 19–22 | |
| 7 | 103(a) | Hancock, Falls | | 7 |
| **Overall Outcome** | | | 1, 2, 5, 19–22 | 7 |

## IV. ORDER

Thus, it is:

ORDERED that claims 1, 2, 5, and 19–22 have been shown, by a preponderance of the evidence, to be unpatentable;

[18] Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

FURTHER ORDERED that claim 7 has not been shown, by a preponderance of the evidence, to be unpatentable;

FURTHER ORDERED that because this is a Final Written Decision, the parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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