

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TANKLOGIX, LLC,
Petitioner,

v.

SITEPRO, INC.,
Patent Owner.

IPR2025-00653
Patent 11,726,504 B2

Before BART A. GERSTENBLITH, TERRENCE W. McMILLIN, and
SHEILA F. McSHANE, *Administrative Patent Judges*.

GERSTENBLITH, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background

TankLogix, LLC (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting institution of *inter partes* review of claims 1–20 (“the Challenged Claims”) of U.S. Patent No. 11,726,504 B2 (Ex. 1001, “the ’504 patent”). SitePro, Inc. (“Patent Owner”) filed a Preliminary Response (Paper 9, “Prelim. Resp.”).¹

An *inter partes* review may be instituted only if “the information presented in the petition . . . and any [preliminary] response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2024). For the reasons given below, on this record Petitioner has not established a reasonable likelihood that it would prevail in showing the unpatentability of any of the Challenged Claims. Accordingly, we do not institute an *inter partes* review.

B. Related Proceedings

The parties identify the following pending litigation involving the ’504 patent: *SitePro, Inc. v. TankLogix, LLC*, 6:24-cv-00642 (W.D. Tex.). Pet. 4; Paper 3 (Patent Owner’s Mandatory Notices), 1. Petitioner also identifies *SitePro, Inc. v. TankLogix, LLC*, 6:24-cv-00643 (W.D. Tex.), as a related matter. Pet. 4. And Patent Owner identifies the following additional related matters: *SitePro, Inc. v. WaterBridge Resources, LLC*, 6:23-cv-

¹ Patent Owner and Petitioner also filed briefs, arguing for and against discretionary denial, respectively. Papers 7, 8. The Acting Director determined that discretionary denial was not appropriate and referred the Petition to the Board. Paper 10.

00115 (W.D. Tex.); *The Integration Group of Americas v. SitePro, Inc.*, IPR20024-00724, IPR2024-00737, IPR2024-00738, IPR2024-00739, IPR2024-00740, IPR2024-00741, and IPR2024-00742²; *SitePro, Inc. v. Plow Technologies LLC*, 6:24-cv-00645 (W.D. Tex.); and *TankLogix, LLC v. SitePro, Inc.*, IPR2025-00647, IPR2025-00648, IPR2025-00649, IPR2025-00650, IPR2025-00651, and IPR2025-00652. Paper 3, 1–2.

C. Real Parties in Interest

Petitioner identifies TankLogix, LLC as the real party in interest. Pet. 4. Patent Owner identifies SitePro, Inc. as the real party in interest. Paper 3, 1.

D. The Asserted Grounds of Unpatentability and Declaration Evidence

Petitioner challenges the patentability of claims 1–20 of the ’504 patent on the following three grounds³ (Pet. 9–59):

² IPR2024-00740, which was terminated prior to a decision on institution, also involved claims of the ’504 patent. Paper 3, 1.

³ Petitioner filed an unopposed “Notice of Errata” to the Petition whereby Petitioner corrected “clerical or typographical errors in the Petition and corresponding expert declaration,” which, *inter alia*, reclassified one reference as § 102(e) prior art as opposed to § 102(a). See Ex. 1010, 1. The changes are reflected in how this Decision refers to the Petition and the grounds presented therein.

Claim(s) Challenged	35 U.S.C. § ⁴	Reference(s)/Basis
1–16, 20	102/103(a)	Cardamone ⁵
1, 17–20	102/103(a)	Kahn ⁶
2, 8, 13	103(a)	Cardamone, Khan, SCADA ⁷

Additionally, Petitioner supports its challenge with a Declaration of Gary R. Wooley, Ph.D. (Ex. 1002). Patent Owner supports its Preliminary Response with a Declaration of Dr. Robert A. Durham (Ex. 2009).

E. The '504 Patent

The '504 patent is directed to “fluid-handling devices and, more specifically, to remote control of fluid-handling devices.” Ex. 1001, 1:33–35. The '504 patent describes “a system for remotely controlling fluid-handling device[s] of an oil well, a petro water disposal or re-injection facility, or a petroleum pumping station”; “a tangible, non-transitory machine-readable medium storing instructions that when executed by a data processing apparatus cause the data processing apparatus to perform operations” pertaining to remotely controlling fluid-handling devices; and a

⁴ The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. §§ 102 and 103 that became effective on March 16, 2013. The '504 patent claims priority to an application filed before March 16, 2013 (*see, e.g.*, Ex. 1001, code (63)), and, therefore, we apply the pre-AIA version of the statutory bases for unpatentability.

⁵ U.S. Patent Application Publication No. 2015/0308244 A1, pub. Oct. 29, 2015 (Ex. 1005, “Cardamone”). *See* Pet. 9–36; Ex. 1010, 1.

⁶ U.S. Patent No. 7,424,399 B2, issued Sept. 9, 2008 (Ex. 1006, “Kahn”).

⁷ SCADA: Supervisory Control and Data Acquisition, 4th ed. (2010) (Ex. 1007, “SCADA”).

“process” with similar steps for remotely controlling fluid-handling devices.
Id. at 2:9–54.

Figure 1, reproduced below, “illustrates an example of a command-center server and site master-controller.” Ex. 1001, 2:62–64.

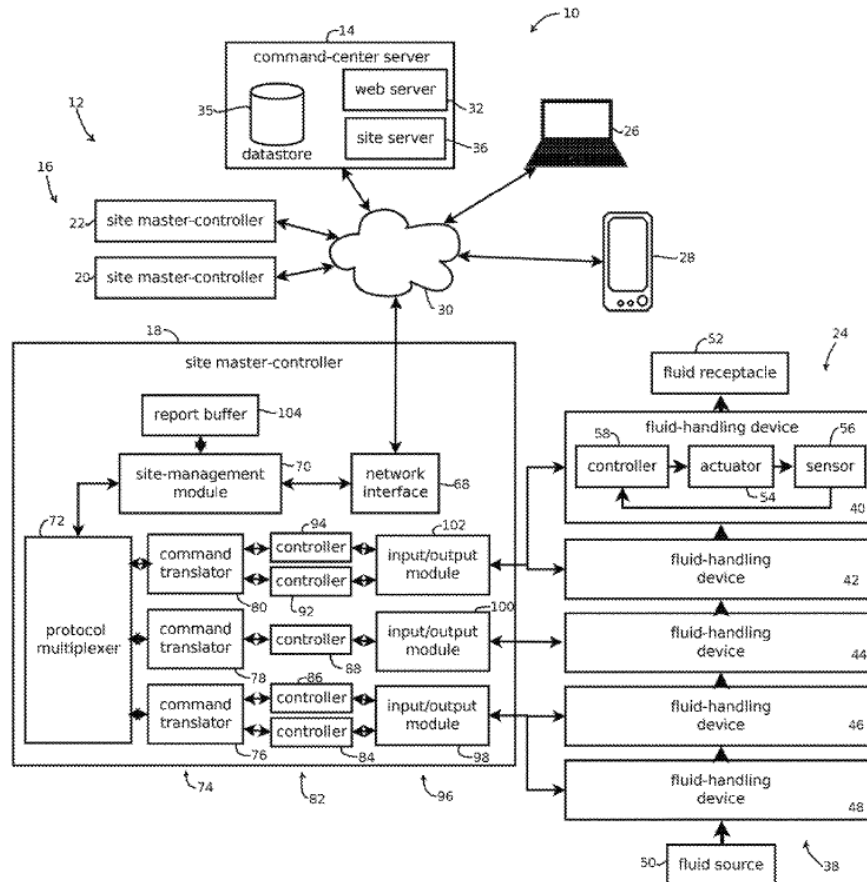


FIG. 1

Figure 1 shows control system 12 that includes command-center server 14 and site master-controllers 18, 20, and 22 “that cooperate to facilitate remote control at a fluid-handling site 24 from user devices 26 or 28 via the Internet 30.” Ex. 1001, 3:22–28. The ’504 patent explains that “[e]ach site master-controller 16 may be co-located with a corresponding fluid-handling site 24 and, in some embodiments, may include logic that implements remotely issued commands.” *Id.* at 3:28–31. The ’504 patent further

explains that command-center server 14 may “be operative to present a command interface and receive commands via a web interface in a web browser on user devices 26 and 28, such that fluid-handling devices can be controlled remotely without the need to install special-purpose software on the computing device through which remote control is exercised.” *Id.* at 3:41–47.

To execute commands at fluid-handling site 24, “site master-controller 18 translates the received commands into a protocol appropriate for the corresponding fluid-handling device 38 (identified individually by reference numbers 40, 42, 44, 46, and 48).” Ex. 1001, 5:46–50. The ’504 patent teaches that “[t]he fluid-handling devices may be any of a variety of different types of devices that handle fluids. For example, . . . a valve, a pump, a process chamber (for instance a[n] oil/water separation tank), or a process filter, or level switch.” *Id.* at 5:63–67. In some instances, “the fluid-handling device may include an actuator, for instance an electric motor or a hydraulic drive, by which fluid flow or other parameters are manipulated, a sensor 56 by which process parameters are measured, or a local controller 58 by which power to the actuator 54 is modulated.” *Id.* at 5:67–6:5. Additionally, the ’504 patent explains that “[f]luid-handling devices 38 may include a variety of types of sensors, for instance, a temperature, viscosity, flowrate, fluid level, pressure, conductivity, or other parameter sensor.” *Id.* at 6:5–8.

Figure 2 is reproduced below:

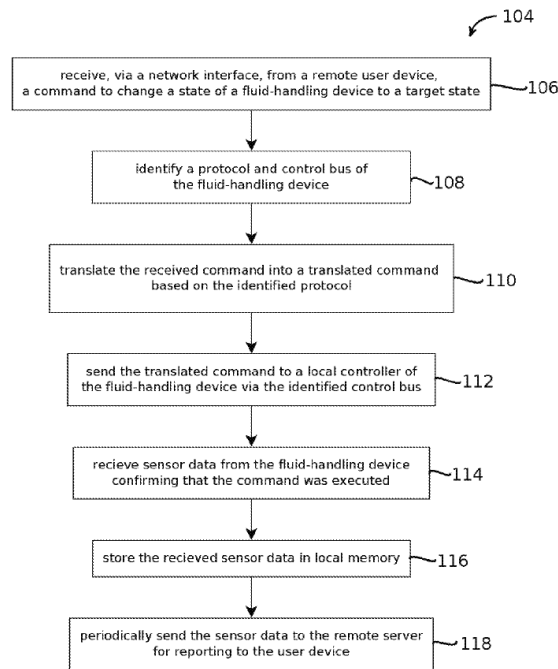


FIG. 2

Figure 2 “illustrates an example of a process by which remote control of fluid-handling devices is exercised in accordance with some embodiments” of the ’504 patent. Ex. 1001, 2:65–67. Process 104 for exercising remote control of a fluid-handling site can include “receiving, via a network interface, from a remote user device, (e.g., via a command-center server) a command to change a state of a fluid-handling device to a target state, as illustrated by block 106.” *Id.* at 11:58–62. The ’504 patent explains

[t]he command may be received from . . . site server 36, which may have received the command from a remote user device via a web browser of the user device. Further, the command to change the fluid-handling device to a target state may include a command that changes the fluid-handling device to a plurality of different states over time, such as a command to ramp up or down a motor speed or oscillate some parameter.

Id. at 11:62–12:3.

F. Illustrative Claim

Claims 1 and 20 are the only independent challenged claims. Each of claims 2–19 depends, directly or indirectly, from claim 1. Claim 1 is illustrative of the claimed subject matter and is reproduced below with Petitioner’s bracketing added for reference:

1. [1.1] A fluid processing system, comprising:

[1.2] a first computer system disposed at a first fluid handling site, wherein the first computer system is configured to:

receive information comprising one or more properties of a first fluid from one or more sensors disposed at a first fluid tank itself disposed at the first fluid-handling site, the fluid-handling site comprising one or more fluid handling devices, the one or more fluid-handling devices comprising one or more of a first pump, a first filter, and a first valve; and

[1.3] provide remote control of a first fluid-handling device of the one or more fluid-handling devices; and

[1.4] a server system wherein the server system has memory storing instructions that, when executed, effectuate operations comprising:

[1.5] receiving, with the server system, from the first computer system, via a network, a first fluid property of the one or more properties associated with the first fluid sensed by a first sensor of the one or more sensors;

[1.6] obtaining, with the server system, credentials from a first client computing device;

[1.7] determining, with the server system, based on the credentials, that a user of the first client computing device is authorized to interact with the first fluid handling site, wherein the server system hosts data about

other fluid handling sites the user is not authorized to interact;

[1.8] after the determination, providing, with the server system, via the network, information by which the first client computing device presents a user interface indicating the first fluid property, the first client computing device being remote from the server system and the first computer system;

[1.9] receiving, with the server system, from the first client computing device, a first command to change a state of the first fluid-handling device; and

[1.10] causing, with the server system, the first computer system disposed at the first fluid handling site to effectuate the command by changing the state of the first fluid-handling device to a sequence of different target states that change over time.

Ex. 1001, 16:51–17:25; *see* Pet. 9–19⁸ (indicating Petitioner’s bracketing);
Ex. 3001 (Certificate of Correction), 1.

II. ANALYSIS

A. Legal Standards

1. Anticipation

“[A] claim is anticipated ‘if each and every limitation is found expressly or inherently in a single prior art reference.’” *King Pharm., Inc. v. Eon Labs., Inc.*, 616 F.3d 1267, 1274 (Fed. Cir. 2010) (quoting *Celeritas Techs., Ltd. v. Rockwell Int’l Corp.*, 150 F.3d 1354, 1361 (Fed. Cir. 1998)).

⁸ Petitioner provides a claim listing at the end of the Petition, but the element numbers added by Petitioner do not match Petitioner’s discussion of claim 1 in the analysis under each ground. *Compare* Pet. 63–64, *with id.* at 9–19. We follow Petitioner’s listing of the elements of claim 1 from the analysis section of the Petition. *Id.* at 9–19.

Anticipation is a question of fact, *In re Gleave*, 560 F.3d 1331, 1334–35 (Fed. Cir. 2009), assessed from the perspective of one of ordinary skill in the art, see *Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368 (Fed. Cir. 2003) (“the dispositive question regarding anticipation [i]s whether *one skilled in the art* would reasonably understand or infer from the [prior art reference’s] teaching that every claim element was disclosed in that single reference” (alterations in original) (quotation omitted)).

2. *Obviousness*

The U.S. Supreme Court set forth the framework for applying the statutory language of 35 U.S.C. § 103 in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966) (footnote added):

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.⁹

The Supreme Court explained in *KSR International Co. v. Teleflex Inc.* that

[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.

⁹ Neither party submitted evidence of objective indicia of nonobviousness.

550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” (alteration in original))).

“Whether an ordinarily skilled artisan would have been motivated to modify the teachings of a reference is a question of fact.” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1327 (Fed. Cir. 2016) (citations omitted).

“[W]here a party argues a skilled artisan would have been motivated to combine references, it must show the artisan ‘would have had a reasonable expectation of success from doing so.’” *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1360–61 (Fed. Cir. 2017) (quoting *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1068–69 (Fed. Cir. 2012)).

B. Level of Ordinary Skill in the Art

Although Petitioner does not address the level of ordinary skill in the art in the Petition, Dr. Wooley testifies that a person of ordinary skill in the art at the time of the invention “would have had at least a bachelor’s degree in engineering (mechanical, chemical, or electrical), computer science, or a related field and significant experience with remotely controlling fluid-handling devices, like [supervisory control and data acquisition (SCADA)] systems.” Ex. 1002 ¶ 25.

Patent Owner asserts that a person of ordinary skill in art “would have had at least a bachelor’s degree in engineering (electrical, chemical, petroleum or mechanical), computer science, or a related field and at least two years of experience designing control systems for remotely controlling

fluid-handling devices, like SCADA systems.” Prelim. Resp. 3 (citing Ex. 2009 ¶ 47). Patent Owner contends that, alternatively, one of ordinary skill in the art “would have had at least six years of experience in designing control systems for remotely controlling fluid-handling devices, such as SCADA systems.” *Id.* at 3–4 (citing Ex. 2009 ¶ 47).

The parties’ proposed levels of ordinary skill in the art are similar, although Patent Owner proposes two years of experience along with a bachelor’s degree whereas Petitioner proposes “significant” experience. Patent Owner also proposes an alternative with more extensive experience in lieu of a bachelor’s degree. Although we find Petitioner’s proposed qualifications acceptable, we adopt Patent Owner’s proposed qualifications for the purposes of this Decision because they offer a wider range of qualifications that nonetheless comport with the level of ordinary skill necessary to understand and implement the teachings of the ’504 patent and the asserted prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978). Our analysis and findings herein, however, do not turn on any differences in the parties’ proposed qualifications.

C. Claim Construction

In an *inter partes* review proceeding, claims are construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b) (2024). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims, as would have been understood by one of ordinary skill in the art at the time of

the invention. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc). In construing claims in accordance with their ordinary and customary meaning, we take into account the specification and prosecution history. *Phillips*, 415 F.3d at 1315–17.

Additionally, only terms that are in controversy need to be construed, and these need be construed only to the extent necessary to resolve the controversy. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

The parties assert that each claim term should be construed in accordance with its plain and ordinary meaning. Pet. 9; Prelim. Resp. 4 (citing Ex. 2009 ¶ 72); *see* Ex. 1002 ¶ 22 (opining the same). And, in the respective claim construction sections of their briefs, the parties do not propose any claim terms for express construction.

We agree with the parties that no claim terms require express construction to resolve the controversy before us. *See Realtime Data*, 912 F.3d at 1375.

D. Ground 1: Anticipated by or Obvious over Cardamone

Petitioner, relying on the testimony of Dr. Wooley, contends that claims 1–16 and 20 are anticipated by or obvious over Cardamone. Pet. 9; *see id.* at 9–36 (Petitioner’s challenge based on Cardamone).

1. *Scope and Content of the Prior Art*

a. *Cardamone (Ex. 1005)*

Cardamone is directed to methods and systems for controlling a linear motor for a deep well oil pump. Ex. 1005, code (54). Cardamone's Figure 1 is reproduced below:

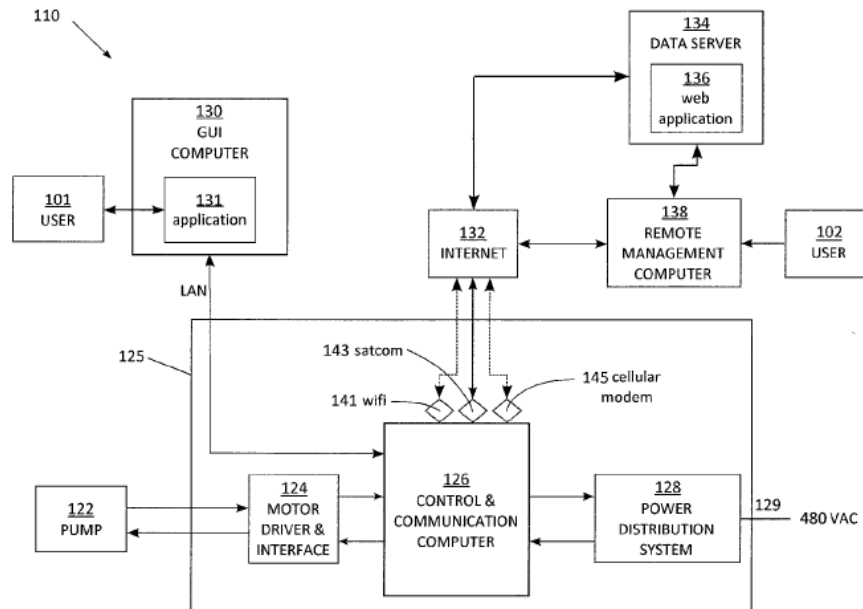


FIG. 1

Figure 1 illustrates “a system [110] for operating a deep oil well pump with a linear motor.” *Id.* ¶ 21. Cardamone explains that “[s]ystem 110 generally includes deep well pump system 122, motor driver 124, control and communication computer 126, and power distribution system 128. Also part of system 110 are [graphical user interface (GUI)] computer 130, data server 134, and remote management computer 128.” *Id.* Cardamone further explains that “[c]ontrol and communication computer 126 also contains communication systems for interacting with data server 134 and GUI computer 130.” *Id.* Cardamone teaches that “[t]hrough interaction via web application 136, remote management computer 138 provides user 102 with a user interface for reviewing sensory data and setting operational parameters

of control and communication computer 126.” *Id.* Additionally, Cardamone explains that

GUI computer 130 generally includes a display for providing user 101 a graphical user interface for viewing system operational data. Operational data includes sensory data from pump system 122, motor driver 124, power distribution system 128, and control and communication computer 126. GUI computer 130 also provides user 101 with a mechanism for changing operational parameters of control and communication computer 126.

Id. ¶ 26.

2. *Claim 1*

Petitioner contends that Cardamone discloses each element of claim 1. *See* Pet. 9–19 (repeating that “Cardamone discloses”). Petitioner also contends that claim 1 would have been obvious in view of Cardamone, but the only mention of obviousness in Petitioner’s entire discussion of claim 1 is a single, conclusory sentence after the discussion of element [1.10] in which Petitioner states “Claim 1 is anticipated by Cardamone or would be obvious to a [person of ordinary skill in the art] in view of Cardamone.” *Id.* at 19. We focus on element [1.2] because it is dispositive.

Element [1.2] recites

a first computer system disposed at a first fluid handling site, wherein the first computer system is configured to: receive information comprising one or more properties of a first fluid *from one or more sensors disposed at a first fluid tank* itself disposed at the first fluid-handling site, the fluid-handling site comprising one or more fluid handling devices, the one or more fluid-handling devices comprising one or more of a first pump, a first filter, and a first valve; and

Ex. 1001, 16:52–60 (emphasis added). Petitioner contends the following:

Cardamone discloses control and communication computer 126 arranged at the surface of the deep oil well. Ex. 1005, ¶ 0024. Control and communication computer 126 includes data sampling and storage mechanisms for receiving and storing sensory data from both pump system 122 and motor driver 124. *Id.* The available data includes inlet pressure, which can be used to determine the depth of fluids remaining in the well, and monitoring pump frequency to monitor the volume of fluids extracted from the well. Ex. 1005, ¶¶ 0029-30, 0044-45, 0049. Cardamone discloses that the raw sensor signals collected by control and communication computer 126 include motor output force, motor position, motor temperature, pump inlet and outlet pressure, inlet temperature, pump inclination, motor driver state, motor driver output current, power distribution system state and temperature, and power distribution system output voltage and current. Ex. 1005, ¶ 0042.

Pet. 10. Regarding the emphasized language of element [1.2] shown above, Petitioner asserts

Cardamone discloses that the fluid handling site has a pump, valve, and tank that handles a fluid in its disclosure of down-hole pump 228 includes a standing valve, a traveling valve, a piston or plunger, inlet 227, and outlet 231. Ex. 1005, [¶] 0029.

A [person of ordinary skill in the art] would understand that the deep oil system and oil wells described in Cardamone include a tank to store the oil that is pumped up the surface of the oil well. Ex. 1005, [¶] 0022; Ex. 1002, ¶ 47.

Thus, Cardamone discloses this claim element.

Pet. 11.

Patent Owner asserts that “Petitioner’s mapping to limitation [1.2] fails for multiple reasons.” Prelim. Resp. 8. First, Patent Owner contends that “Cardamone does not disclose or discuss a tank.” *Id.* (citing Ex. 2009

¶ 80). Second, Patent Owner asserts Cardamone “fails to disclose or discuss sensors that are *disposed at a tank*, as required by the claim.” *Id.* at 9.

We agree with Patent Owner that Petitioner fails to show that Cardamone discloses a “first computer system is configured to: receive information comprising one or more properties of a first fluid *from one or more sensors disposed at a first fluid tank*” because Petitioner fails to show that Cardamone discloses a tank or one or more sensors disposed at a first fluid tank. We review each portion of Cardamone cited by Petitioner for this clause of element [1.2].

First, Petitioner cites paragraph 29 of Cardamone, asserting it discloses a tank. Pet. 11. Paragraph 29 states:

FIG. 2 is a block diagram of pump system 122. Pump system 122 includes motor 222 arranged near the bottom of an oil well and down-hole pump 228. Motor 222 is a three phase permanent magnet linear electric motor having a stationary stator and a sliding shaft. Motor 222 receives power from three phase power line 234 from motor driver 124. Coupled to motor 222 is motor sensor package 224. Motor sensor package 224 includes a synchronous serial interface (SSI) encoder for sensing the position of the linear motor shaft, a temperature sensor for monitoring the motor temperature, an inclinometer for measuring the angle that the linear motor is mounted, and a circuit fault detector. Motor 222 is coupled to down-hole pump 228. Down-hole pump 228 includes a standing valve, a traveling valve, a piston or plunger, inlet 227, and outlet 231. Pump 228’s piston is coupled to motor 222’s shaft. As pump 228’s piston is forced up and down by motor 222, oil is drawn into inlet 227, and pushed up out of outlet 231. Outlet 231 is coupled to production tubing leading to the surface of the oil well.

Ex. 1005 ¶ 29. As reflected above, paragraph 29 does not disclose a tank, or one or more sensors disposed at a first fluid tank as recited in element [1.2].

Second, Petitioner cites to paragraph 22 of Cardamone, asserting that one of ordinary skill in the art would understand that Cardamone “include[s] a tank to store the oil that is pumped up the surface of the oil well.” Pet. 11. Paragraph 22 states:

System 110 provides high level and detailed remote control of deep oil well pump system 122 with numerous features for highly efficient and safe operation. Pump system 122 is arranged near the bottom of a deep oil well and has the primary purpose of pumping oil up to the surface of the oil well. Pump system 122 includes a linear electromagnetic pump motor. Pump system 122 contains several sensors for monitoring pump operation and deep oil well conditions. Pump system 122 is connected to motor driver and interface 124.

Ex. 1005 ¶ 22. Although paragraph 22 teaches that oil is pumped to the surface of the oil well and that pump system 122 “contains several sensors for monitoring pump operation and deep oil well conditions,” it does not teach a tank, or one or more sensors disposed at a tank as recited in element [1.2].

Additionally, Petitioner cites to paragraph 47 of Dr. Wooley’s declaration. Pet. 11. Paragraph 47 is Dr. Wooley’s complete testimony regarding element [1.2], and states:

A [person of ordinary skill in the art] would understand that the control and communication computer system is a first computer and that the pump system includes a pump, valve, and filter. *See supra*, ¶¶ 27-28, 39-44 (above discussion of controllers). It is well known that a fluid-handling site [sic] pumps, filters, and valves. *See, e.g.*, Ex. 1005, ¶ 0024. Thus, Cardamone discloses this claim element.

Ex. 1002 ¶ 47. As reflected above, Dr. Wooley’s testimony as to element [1.2] does not even assert that Cardamone discloses a tank, let alone

one or more sensors disposed at a tank as recited in element [1.2]. Thus, Dr. Wooley’s testimony does not support Petitioner’s argument on this issue.

Accordingly, on the present record, Petitioner has not established that Cardamone discloses element [1.2], and, therefore, has not established a reasonable likelihood of showing that Cardamone anticipates claim 1.

Additionally, although Petitioner characterizes its challenge as one based on anticipation “or” obviousness, neither Petitioner nor Dr. Wooley makes any attempt to show that element [1.2] (or any other element of claim 1) would have been obvious to one of ordinary skill in the art based on Cardamone.¹⁰ *See* Pet. 10–11; Ex. 1002 ¶ 47. Accordingly, on the present record, Petitioner has not established a reasonable likelihood of showing that Cardamone would have rendered claim 1 obvious.

3. *Claims 2–16*

Claims 2–16 depend from claim 1. Petitioner relies on its analysis of claim 1 when addressing each of these dependent claims. *See, e.g.*, Pet. 19 (“Cardamone discloses Claim 1 for the reasons discussed above and incorporated herein.”), 19–36 (repeating a similar statement for each dependent claim). Thus, we find Petitioner’s analysis of these dependent claims deficient for the same reasons discussed above in the context of claim 1. Accordingly, on the present record, Petitioner has not established a

¹⁰ As noted above, the only mention of obviousness in Petitioner’s entire discussion of claim 1 is a single, conclusory sentence after the discussion of element [1.10] in which Petitioner states “Claim 1 is anticipated by Cardamone or would be obvious to a [person of ordinary skill in the art] in view of Cardamone.” Pet. 19.

reasonable likelihood of showing that Cardamone anticipates or renders obvious claims 2–16.

4. *Claim 20*

Independent claim 20 recites limitations substantially the same as claim 1. *Compare* Ex. 1001, 18:62–20:17 (claim 20), *with id.* at 16:51–17:25 (claim 1); *see* Ex. 3001, 1. Recognizing this similarity, Petitioner’s analysis of claim 20 relies entirely on its analysis of claim 1. *See, e.g.*, Pet. 36 (“limitation 20.2 is analogous to limitation 1.2”). Dr. Wooley takes the same approach. *See* Ex. 1002 ¶ 114 (“limitation 20.2 is analogous to limitation 1.2”). Thus, we find Petitioner’s analysis of element [20.2], which recites “measuring, with one or more sensors at a first fluid tank located at a first fluid-handling site, one or more properties associated with a first fluid,” deficient for the same reasons discussed above in the context of claim 1. Accordingly, on the present record, Petitioner has not established a reasonable likelihood of showing that Cardamone anticipates or renders obvious claim 20.

5. *Summary of Ground 1*

For the reasons discussed above, Petitioner has not established, on the present record, a reasonable likelihood that it would prevail in showing that Cardamone anticipates or renders obvious claims 1–16 and 20.

E. Ground 2: Anticipated by or Obvious over Kahn

Petitioner, relying on the testimony of Dr. Wooley, contends that claims 1 and 17–20 “are anticipated by . . . Kahn . . . or would be obvious to a [person of ordinary skill in the art] in view of Kahn.” Pet. 37; *see id.* at 37–54 (Petitioner’s challenge based on Kahn).

1. *Scope and Content of the Prior Art*

a. *Kahn (Ex. 1006)*

Kahn is directed to sensor systems and methods for fluid monitoring.

Ex. 1006, 1:28–29. Kahn discloses:

sensor systems and methods for fluid (e.g., water) quality data gathering including on-line fluid quality monitoring by means of sensors with wired or wireless connections to a communications network (e.g., the Internet), for access and visualization of fluid quality data over the Internet via a graphical web-browser interface, and for sharing of such data via the Internet.

Id. at 1:30–36. Kahn further discloses that a service provider can receive fluid test data generated from multiple different entities and the system permits authorized users for the different entities to visualize information associated with that data via the Internet using graphical computer interfaces at their respective computers. *Id.* at 2:50–54.

Figure 3, reproduced below, is a block diagram of a data collection network for a water monitoring system. Ex. 1006, 18:40–43.

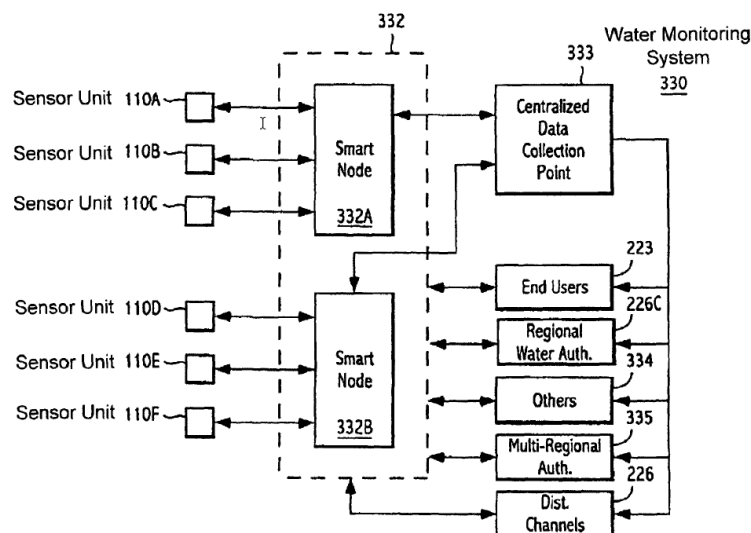


FIG. 3

Figure 3 depicts sensor units 110A–110F located at different sites that are connected to water quality monitoring system 330 by communication links.

Id. at 18:44–47. The sensor units may be connected to respective smart nodes 332A, B where the smart nodes may have a relationship to the region or water authority 226C, for example. *Id.* at 18:53–62.

Figure 8A, reproduced below, depicts a display for an authorized user. Ex. 1006, 28:30–35.

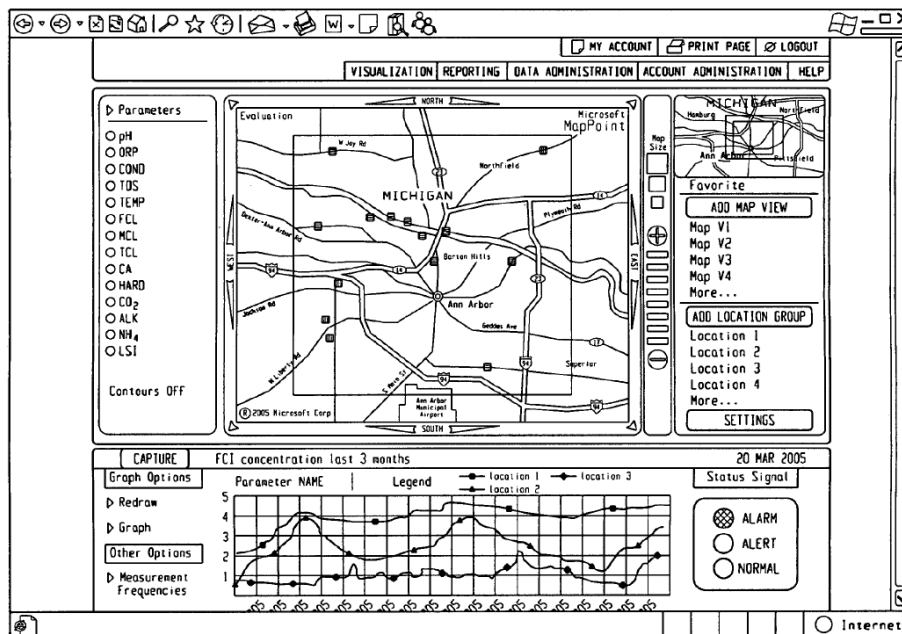


Fig. 8A

Figure 8A depicts information provided to a user that is information associated with fluid test data from sensors in a geographic area that have been acquired over some time frame. *Id.* at 28:30–35. Figure 8A includes main page tabs, such as “VISUALIZATION, REPORTING, DATA ADMINISTRATION, ACCOUNT ADMINISTRATION, and HELP.” *Id.* at 28:39–41. The map over a certain geographic area has squares associated with certain fluid test measurements, and, for instance, certain locations can be selected by clicking on them on the map and certain fluid test parameters

in the left area of Figure 8A can also be selected for display. *See id.* at 28:43–54.

2. *Claim 1*

Petitioner contends that Kahn discloses each element of claim 1 ([1.1]–[1.10]). *See* Pet. 37–47 (repeating that “Kahn discloses”). Petitioner also contends that claim 1 would have been obvious in light of Kahn, but the only mention of obviousness in Petitioner’s entire discussion of claim 1 is a single, conclusory sentence after the discussion of element [1.10] in which Petitioner states “Claim 1 is anticipated by Kahn, or would be obvious to a [person of ordinary skill in the art] in view of Kahn.” *Id.* at 47. We focus on element [1.3] because it is dispositive.

Element [1.3], in the context of claim 1, recites that a first computer system disposed at a first fluid-handling site is configured to “provide remote control of a first fluid-handling device of the one or more fluid-handling devices.” Ex. 1001, 16:61–62. Petitioner asserts the following regarding element [1.3]:

Kahn further discloses that sensor unit 110 includes communication equipment with actuators configured to manipulate fluid flow at respective fluid-handling facilities. *See, e.g.*, Ex. 1006, 8:19-21, 10:62-67; *see also id.*, 14:35-15:2, 15:62-16:32.

A [person of ordinary skill in the art] would understand from Kahn’s disclosure of remote communication devices that Kahn discloses a [sic] provide remote control of a first fluid-handling device of the one or more fluid-handling devices. Ex. 1002, ¶ 92. Thus, Kahn discloses this claim element.

Pet. 39.

Patent Owner contends “Petitioner’s mapping of Kahn’s disclosure to [1.3] fails since Kahn does not disclose, teach, suggest, or render obvious the claimed feature of ‘*provide remote control*.’ Kahn’s system does not provide remote control of any of Kahn’s fluid-handling devices.” Prelim. Resp. 11–12 (citing Ex. 2009 ¶ 105). Patent Owner asserts that Kahn’s actuators and valves are “not controlled remotely by a user command, but instead are controlled locally (e.g., by a processor in a local sensor or other device).” *Id.* at 12. Additionally, Patent Owner contends that a citation provided by Petitioner points to Kahn’s disclosure regarding local control, including on-site alerts, but that disclosure “does not teach or even suggest ‘*remote control of a first fluid handling device*’ as the claim requires.” *Id.* at 12–13. Thus, Patent Owner asserts Petitioner’s contention—that one of ordinary skill in the art would understand Kahn as disclosing remote control—and Dr. Wooley’s testimony are unsupported and conclusory. *Id.* at 13 (citing Ex. 1002 ¶ 92).

We agree with Patent Owner that the Petition fails to demonstrate that Kahn discloses element [1.3] because the evidence cited does not disclose a first computer system, disposed at a first fluid-handling site, that is configured to “provide remote control of a first fluid-handling device of the one or more fluid-handling devices.” Kahn is directed to providing access to fluid sensing data and analyzing and providing visual information on that data, but Petitioner has not identified any disclosure of the capability to remotely control fluid-handling devices. *See, e.g.*, Ex. 1006, code (54), 1:27–36, 2:50–3:2. We discuss each portion of Kahn cited by Petitioner.

First, Petitioner points to the following, “[f]or instance, as illustrated in FIG. 1C, a fluid control device such as a valve 15A is located on the input

side of a sen[s]or unit 110.” Ex. 1006, 8:19–21, *cited in* Pet. 39. This portion of Kahn, however, does not disclose remote control.

Second, Petitioner cites to the following:

Finally, or in addition to, the communication unit 112B can include on-site alerts such as optical (indicator lights), audible alerts (e.g., alarm sounds), tactile (e.g., vibration of the unit) or can be interfaced to an appropriate control valve for simply shutting off the supply of fluid upon the detection of emergency events, for instance.

Pet. 39 (citing Ex. 1006, 10:62–67). We agree with Patent Owner that this portion of Kahn teaches on-site alerts and local control of the fluid-handling device. *See* Prelim. Resp. 12–13. This portion of Kahn does not disclose remote control.

Third, Petitioner points to the following from Kahn:

As noted above, a mechanism for selectively exposing individual sensors 111 to the fluid can be provided. For example, as illustrated in FIGS. 1D, 1H and 1I, a cover membrane 120 (or multiple cover membranes, one for each sensor 111) can be attached to a surface of a substrate 116, 122, the cover membrane 120 covering the plurality of sensors 111, in the recesses 116A, or below the apertures 122A. A plurality of heating elements 121, for example, can be attached to the membrane 120 at positions proximate to respective sensors 111. Each heating element 121 can be selectively operable to generate an opening in the membrane 120 thereby allowing a particular sensor 111 positioned proximate to a recess 116A or aperture 122A to be exposed to the fluid. As an alternative to using heating elements 121 to selectively expose a sensor 111, any suitable mechanisms which serve to dissolve the membrane or physically remove or tear off at least a portion of the membrane 120 can be used, such as shown in FIG. 1J by a conceptually illustrated mechanical perforator 124 or FIG. 1K by a conceptually illustrated mechanical gripper or scraper 125. The embodiments of FIGS. 1J and 1K illustrate in a generic

way any number of mechanical means for selectively removing the membrane 120. In addition, any suitable actuation mechanism(s) can be used enable [sic] the mechanical perforator 124 or the mechanical gripper or scraper 125 to be positioned adjacent to a given sensor 111 and to selectively expose that sensor 111. For example, the sensors can be configured along a line or in a two-dimensional array on the substrate 116, and one or more actuators can be used to provide relative linear motion in one or two directions between the substrate 116 and the mechanical member 125 [sic], 125. As another example, the sensors 111 can be arranged along the circumference of a circle, and one or more actuators can be used to provide relative rotational motion between the substrate 116 and the mechanical member 124, 125.

Ex. 1006, 14:35–15:2, *cited in* Pet. 39. The above disclosure from Kahn describes different aspects of sensors and particularly for selectively exposing individual sensors to fluid. But this portion of Kahn does not disclose remote control.

Lastly, Petitioner cites to the following teaching of Kahn:

An actuator 119D moves the backing plate 119A and the substrate 116 to selectively locate an individual sensor 111 to a region of the aperture such that the particular sensor 111 is exposed to the fluid. The substrate 116 is preferably flat to allow for a good seal, but the invention is not so limited. As discussed previously, sensors 111 can be formed on a recessed or non-recessed surface of the substrate 116. To minimize the potential for fluid leakage into the sensor cavity 119', the valves 115A and 115B can be actuated to partially or substantially drain the fluid cavity 119" before selectively exposing a new sensor 111 with the actuator 19D [sic].

The sensors 111 can be lithographically produced, deposited or screen printed on a recessed or non-recessed surface of the substrate 116, and might be formed at the circumference of a circle so as to allow the actuator 119D to be a simple carousel mechanism using rotational motion as shown

in FIG. 1M, or can be formed in a staggered or straight line as shown in FIG. 1N, or in a two-dimensional array, for instance, and the actuator 119D can provide for a linear motion in one or more dimensions. The substrate can be in the form of substrate 116 with recesses 116A as shown in FIGS. 1N and 1E, or can be in the form of the flip-chip bonded substrate 122, 123 shown in FIG. 1F.

In view of the above, it will be apparent that carousel or linear motion embodiments can be used in conjunction with sensors 111 covered by at least one membrane 120 attached to a surface of the substrate 116 (e.g., FIGS. 1J and 1K), in which case a mechanical member 124, 125 selectively displaces or perforates the at least one membrane 120 in a region proximate to an individual sensor 111 to allow the particular sensor 111 to be exposed to a fluid. In this regard, a configuration similar to that illustrated in FIGS. 1L and 1M (or 1N) can be used. The actuator 119D can provide relative motion between the substrate 116 (mounted on backing plate 119A) and the mechanical member 124, 125 to allow the mechanical member 124, 125 to selectively displace the at least one membrane 120. The seal 119C and housing 119 may not be necessary in embodiments involving a membrane 120.

Ex. 1006, 15:62–16:32, *cited in* Pet. 39. The above disclosure from Kahn describes different aspects of Kahn’s actuators and sensors but does not disclose remote control.

Dr. Wooley’s testimony as to element [1.3] consists of the following three sentences:

Controllers are used in remote oil fields and fluid-handling management systems to control fluid-handling devices such as pumps, valves, filters, tanks, motor drive systems, and pump systems including actuators. Ex. 1006, 8:19-21, 10:62-67; see also *id.*, 14:35-15:2, 15:62-16:32). A [person of ordinary skill in the art] would understand from Kahn that it discloses remote control of a first fluid-handling device of the one or

more fluid-handling devices. Thus, Kahn discloses this claim element.

Ex. 1002 ¶ 92. As reflected above, Dr. Wooley relies on the same portions of Kahn as Petitioner. Those portions of Kahn, however, do not disclose remote control as we discussed above. *See* Ex. 2009 ¶¶ 105–107 (opining that Kahn does not disclose element [1.3]).

Accordingly, on the present record, Petitioner has not established that Kahn discloses a first computer system, disposed at a first fluid-handling site, that is configured to “provide remote control of a first fluid-handling device of the one or more fluid-handling devices,” as recited by element [1.3].

Additionally, although Petitioner characterizes its challenge as one based on anticipation “or” obviousness, neither Petitioner nor Dr. Wooley makes any attempt to show that element [1.3] (or any other element of claim 1) would have been obvious to one of ordinary skill in the art based on Kahn. *See* Pet. 37–54¹¹; Ex. 1002 ¶¶ 88–100. Accordingly, on the present record, Petitioner has not established a reasonable likelihood of showing that Kahn would have rendered claim 1 obvious.

3. *Claims 17–19*

Claims 17–19 depend from claim 1. Petitioner does not address the deficiency identified above in its discussion of these dependent claims. *See* Pet. 47–54. Thus, we find Petitioner’s analysis of these dependent claims

¹¹ As noted above, the only mention of obviousness in Petitioner’s entire discussion of claim 1 is a single, conclusory sentence after the discussion of element [1.10] in which Petitioner states “Claim 1 is anticipated by Kahn, or would be obvious to a [person of ordinary skill in the art] in view of Kahn.” Pet. 47.

deficient for the same reasons discussed above in the context of claim 1. Accordingly, on the present record, Petitioner has not established a reasonable likelihood of showing that Kahn anticipates or renders obvious claims 17–19.

4. *Claim 20*

Independent claim 20 recites limitations substantially the same as claim 1. *Compare* Ex. 1001, 18:62–20:17 (claim 20), *with id.* at 16:51–17:25 (claim 1); *see* Ex. 3001, 1. Recognizing this similarity, Petitioner’s analysis of claim 20 relies entirely on its analysis of claim 1. *See, e.g.*, Pet. 54 (asserting elements of claim 20 are “analogous” to elements claim 1). Dr. Wooley takes the same approach. *See* Ex. 1002 ¶ 112 (also asserting elements of claim 20 are “analogous” to elements of claim 1). Thus, we find Petitioner’s analysis of element [20.4], which recites “*providing, with the first computer system, remote control of a first fluid-handling device of a plurality of fluid-handling devices, the first fluid-handling device comprising at least one of a first pump, a first filter, and a first valve*” (emphasis added), deficient for the same reasons discussed above in the context of claim 1. Accordingly, on the present record, Petitioner has not established a reasonable likelihood of showing that Kahn anticipates or renders obvious claim 20.

5. *Summary of Ground 2*

For the reasons discussed above, Petitioner has not established, on the present record, a reasonable likelihood that it would prevail in showing that Kahn anticipates or renders obvious claims 1 and 17–20.

F. Ground 3: Obvious over Cardamone or Kahn, and SCADA

Petitioner, relying on the testimony of Dr. Wooley, contends that claims 2, 8, and 13 are obvious over either Cardamone or Kahn in combination with SCADA. Pet. 54–59. In addressing each of dependent claims 2, 8, and 13, Petitioner relies on its discussion of claim 1 from Ground 1 (when discussing the combination of Cardamone and SCADA) or its discussion of claim 1 from Ground 2 (when discussing the combination of Kahn and SCADA). *See* Pet. 55 (beginning the discussion of claim 2 by stating “Cardamone and Kahn discloses [sic] Claim [1]¹² for the reasons discussed above and incorporated herein” (footnote added)), 57 (beginning the discussion of claim 8 by stating “Cardamone and Kahn disclose Claim 1 . . . for the reasons discussed above and incorporated herein”), 58 (beginning the discussion of claim 13 by stating “Cardamone and Kahn disclose Claim 1 . . . for the reasons discussed above and incorporated herein”). Petitioner does not rely on SCADA to address the deficiencies we identified above in Ground 1 (Cardamone) or Ground 2 (Kahn) as applied to independent claim 1. Thus, we find Petitioner’s analysis of dependent claims 2, 8, and 13 deficient for the same reasons discussed above in the context of claim 1. Accordingly, on the present record, Petitioner has not established a reasonable likelihood of showing that Kahn or Cardamone in combination with SCADA renders obvious claims 2, 8, and 13.

¹² We understand Petitioner to refer to claim 1 because this sentence comes before Petitioner’s analysis of the limitations expressly recited in claim 2 and follows the same sequence of argument Petitioner applies to claims 8 and 13. *Compare* Pet. 55 (claim 2) *with id.* at 57 (claim 8), 58 (claim 13).

III. CONCLUSION

For the reasons discussed above, we find that Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing that any of the Challenged Claims of the '504 patent is unpatentable.

IV. ORDER

Accordingly, it is

ORDERED that the Petition is *denied* as to the Challenged Claims of the '504 patent; and

FURTHER ORDERED that no *inter partes* review is instituted.

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Patent 11,726,504 B2

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