

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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TANKLOGIX, LLC,  
Petitioner

v.

SITEPRO, INC.,  
Patent Owner

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Case No. IPR 2025-00647

U.S. Patent No. 9,898,014

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**PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 9,898,014**

**TABLE OF CONTENTS**

PETITIONER’S EXHIBIT LIST..... iv

I. INTRODUCTION .....5

II. MANDATORY NOTICES.....5

    A. Real Parties-in-Interest (37 C.F.R. §42.8(b)(1)) .....5

    B. Related Matters (37 C.F.R. § 42.8(b)(2)).....5

    C. Counsel (37 C.F.R. § 42.8(b)(3)) and Service Information (37 C.F.R. §  
    42.8(b)(3)-(4)).....5

III. CERTIFICATION AND FEES .....6

IV. BACKGROUND .....6

V. THE ALLEGED INVENTION OF THE ‘014 PATENT .....7

    A. Summary of Prosecution History (EX1004) .....7

VI. OVERVIEW OF THE PRIOR ART .....8

    A. Kahn (EX1005) .....9

    B. Gutierrez (EX1006).....9

VII. CLAIM CONSTRUCTION.....9

VIII. GROUNDS FOR PETITION .....10

    A. Ground 1: Kahn Anticipates or renders obvious Claims 1, 4-18, and 21-23 .....10

        1. Claim 1.....10

        2. Claim 4 .....19

        3. Claim 5 .....19

        4. Claim 6 .....21

        5. Claim 7 .....22

        6. Claim 8 .....22

        7. Claim 9 .....23

        8. Claim 10 .....24

        9. Claim 11 .....25

        10. Claim 12 .....26

        11. Claim 13 .....26

        12. Claim 14 .....30

13.	Claim 15 .....	30
14.	Claim 16 .....	31
15.	Claim 17 .....	32
16.	Claim 18 .....	32
17.	Claim 21 .....	33
18.	Claim 22 .....	34
19.	Claim 23 .....	35
B.	Ground 2: Kahn in view of Gutierrez renders obvious Claims 1-5, 8-10, 12-16, 18-21, and 23.....	35
1.	Motivation to Combine Gutierrez and Kahn.....	36
2.	Claim 1 .....	38
3.	Claim 2 .....	52
4.	Claim 3 .....	55
5.	Claim 4 .....	56
6.	Claim 5 .....	57
7.	Claim 8 .....	59
8.	Claim 9 .....	59
9.	Claim 10 .....	60
10.	Claim 12 .....	61
11.	Claim 13 .....	62
12.	Claim 14 .....	62
13.	Claim 15 .....	63
14.	Claim 16 .....	63
15.	Claim 18 .....	64
16.	Claim 19 .....	64
17.	Claim 20 .....	65
18.	Claim 21 .....	66
19.	Claim 23 .....	66
C.	Discretionary Factors Favor Institution .....	67
1.	<i>Advanced Bionics</i> Factors and 35 U.S.C. §325(d) Favor Institution .....	67

2.	Discretionary Denial Under <i>Fintiv</i> and 35 U.S.C. §314(a) Is Not Appropriate .....	67
a.	No Evidence Regarding A Stay .....	67
b.	Parallel Proceeding Trial Date .....	67
c.	Investment in Parallel Proceeding.....	68
d.	Overlapping Issues With Parallel Proceeding.....	68
e.	Identity Of Parties .....	68
f.	Other Circumstances, Including The Merits .....	69
3.	<i>General Plastic</i> Factors Favor Institution.....	69
IX.	CONCLUSION.....	69
	U.S. PATENT NO. 9,898,014 – LISTING OF CHALLENGED CLAIMS.....	70
	CERTIFICATION OF COMPLIANCE WITH TYPE-VOLUME LIMITS .....	75
	CERTIFICATE OF SERVICE.....	76

**PETITIONER'S EXHIBIT LIST**

<b><u>EXHIBIT</u></b>	<b><u>DESCRIPTION</u></b>
EX1001	U.S. Patent No. 9,898,014
EX1002	Declaration of Dr. Gary Wooley
EX1003	Curriculum Vitae of Dr. Gary Wooley
EX1004	File Wrapper for U.S. Patent No. 9,898,014
EX1005	U.S. Patent No. 7,424,399 to Kahn
EX1006	U.S. Patent No. 9,709,995 to Gutierrez
EX1007	Fundamentals of Computing With C++
EX1008	Learning Java, 3rd Edition
EX1009	Java Threads, 2nd Edition
EX1010	Judicial Caseload for Western District of Texas

## I. INTRODUCTION

Petitioner requests *Inter Partes* Review (“IPR”) of claims 1-9 and 11-23 (the “Challenged Claims”) of U.S. Patent No. 9,898,014 (“the ‘014 Patent”).

This petition (IPR 2025-00647) is part of a set of **seven** petitions, including IPR 2025-00648, IPR 2025-00649, IPR 2025-00650, IPR 2025-00651, IPR 2025-00652, and IPR 2025-00653, which challenge claims of U.S. Patent Nos. 8,649,909 (the “’909 Patent”); 9,342,078 (the “’078 Patent”); 10,488,871 (the “’871 Patent”); 11,175,680 (the “’680 Patent”); 11,294,403 (the “’403 Patent”); and 11,726,504 (the “’504 Patent”); (collectively, with the ‘014 Patent, the “Challenged Patents”) respectively. Petitioner requests that the PTO combine the schedule, discovery, and hearing of these seven IPRs.

## II. MANDATORY NOTICES

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

The real party-in-interest is TankLogix, LLC (“TankLogix,” or “Petitioner”).

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

The ‘014 Patent is related to two district court cases pending in the United States District Court for the Western District of Texas. SitePro, Inc. (“Patent Owner”) asserted the ‘909 Patent, ‘504 Patent, ‘078 Patent, ‘014 Patent, ‘871 Patent, ‘680 Patent, and ‘403 Patent, against Petitioner in *SitePro, Inc. v. TankLogix, LLC*, No. 6:24-cv-00642; -643 (W.D. Tex.).

### C. Counsel (37 C.F.R. § 42.8(b)(3)) and Service Information (37 C.F.R. §

**42.8(b)(3)-(4)**

Petitioner designates Robert D. Katz (Reg. No. 60,704) as lead counsel and designates Dr. Gregory J. Gonsalves (Reg. No. 43,639) as backup counsel for this matter.

Postal mailings and hand-deliveries for lead and backup counsel should be addressed to: Robert D. Katz, Katz PLLC, 8350 N. Central Expressway, Suite 1900, Dallas, TX 75206 (Telephone: 214.865.8000; Fax: 888.231.5775).

Pursuant to 37 C.F.R. §42.8(b)(4), Petitioner consents to e-mail service at: rkatz@katzfirm.com and gregoryjosephgonsalves@gmail.com. In compliance with 37 C.F.R. §42.10(b), a Power of Attorney is filed concurrently herewith.

**III. CERTIFICATION AND FEES**

Petitioner certifies that the '014 Patent is available for IPR and that the Petitioner is not barred or estopped from requesting *inter partes* review of claims 1-20 of the '014 Patent identified in this Petition. Any additional fees for this IPR may be charged to Deposit Account No. DA603042.

**IV. BACKGROUND**

The Challenged Patents relate to the remote operation of fluid-handling devices. In the oil and gas industry, fluid handling systems direct, measure, and maintain the flow of fluids across a manufacturing plant or factory. EX1001, 1:11-22.

Industrial fluid handling systems place sensor and actuator functions on-site,

supported by a remote controller that receives information from the sensors and transmits instructions to the actuators. *See generally*, EX1005, EX1006. The on-site sensors detect operational information and deliver that information to associated controller devices. *See generally*, EX1005, EX1006. The actuator function allows for remote electronic control of the components, for example, motors, pumps, or valves, based on commands received from a controller device. *See generally*, EX1005, EX1006.

## **V. THE ALLEGED INVENTION OF THE '014 PATENT**

The '014 Patent, entitled "Remote Control of Fluid-Handling Devices," describes a remote data collection and control system for fluid-handling devices found in oil wells, petro water disposal or re-injection facilities, or petroleum pumping stations, which the command center control systems manage as separate user accounts. EX1001, Claim 1. The command center system receives data from and sends commands to an on-site controller, configured to operate whether or not continuously connected to the command center system. *Id.* The fluid-handling device controller in the claimed system allows different users to access data or control mechanisms only at designated locations. *Id.*

### **A. Summary of Prosecution History (EX1004)**

Application resulting in the '014 Patent was filed on December 30, 2015. Ex. 1004, at 1-2. The present application is a continuation of U.S. Patent Application 14/147,190, filed January 3, 2014, titled Remote Control of Fluid-Handling Devices,

which is a continuation of U.S. Patent Application 13/708,557, issued as U.S. Patent 8,649,909, filed 07 December 2012, and titled Remote Control of Fluid-Handling Devices. EX1004, at 325.

In a December 21, 2016, Office Action, the Examiner rejected Claims 1, 5, 7-10, 12, 18-21, and 23 are rejected under pre-AIA 35 U.S.C. §103(a) as being unpatentable over designated prior art. EX1004, at 280-316.

In a March 21, 2017 response to the office action, the applicant amended claims, but in a March 31, 2017 Office Action, the Examiner again rejected Claims 1-23. EX1004, at 170-212.

On September 21, 2017, the Applicant filed an amendment and response to the March 31, 2017 office action. The applicant amended claim 1 to include that the plurality of accounts includes a first account, a second account, a third account, and a fourth account; where, paraphrasing with the full claim language recited below, each account is granted access only to a set of designated facilities' data or control structures. EX1004, at 67-73.

In a October 10, 2017 Notice of Allowability, the Examiner allowed Claims 1-23 and noted that the prior art as described in the prosecution history does not describe the full claims including the new plurality of accounts claim language with each account only authorized to access designated facilities' data or control. EX1004, at 62-66.

## **VI. OVERVIEW OF THE PRIOR ART**

The challenged claims are anticipated by or are obvious over the following prior art.

**A. Kahn (EX1005)**

U.S. Patent No. 7,424,399 to Kahn was filed on June 9, 2006 and claims priority to Provisional U.S. Patent Application No. 60/689,257 filed on June 10, 2005. Kahn was published on March 1, 2007 and is prior art under pre-AIA §102(a).

Kahn teaches a remote monitoring and control fluid delivery system permitting authorized users from different entities to view data and control designated fluid delivery devices. EX1005, Abstract.

**B. Gutierrez (EX1006)**

U.S. Patent No. 9,709,995 to Gutierrez was filed on December 22, 2014, and published on April 16, 2015. Gutierrez is a continuation of U.S. Patent Application No. 12/794,898 filed on June 7, 2010, published on December 9, 2010, and claiming the benefit of Provisional U.S. Patent Application No. 61/184,890 filed on June 8, 2009. Gutierrez is prior art under pre-AIA §§102(a) and 102(e).

Gutierrez teaches a chemical injection system that includes a pump connected to a chemical reservoir and pipeline that can all be controlled using a local motor controller connected to a central controller and remote computing device. EX1006, Abstract.

**VII. CLAIM CONSTRUCTION**

No terms need to be construed to resolve the issues raised in this Petition because the prior art discloses all limitations under the plain meaning as well as under any plausible construction.

## VIII. GROUNDS FOR PETITION

### A. Ground 1: Kahn Anticipates or renders obvious Claims 1, 4-18, and 21-23

Independent claim 1 and dependent claims 4-18, and 21-23 are anticipated by U.S. Patent No. 7,424,399 (“Kahn”) under 35 U.S.C. §102, or would be obvious to a POSITA in view of Kahn under 35 U.S.C. §103.

#### 1. Claim 1

- a. **[1.1] A hosted, web-based, remote industrial monitoring and control system for geographically distributed facilities in oil and gas fields, the system comprising:**

To the extent that the Board finds that the preamble is limiting, Kahn discloses hosted, web-based, remote industrial monitoring and control system for geographically distributed facilities. *See, e.g.*, EX1005, Abstract, 10:62-67; 14:35-15:2, 15:62-16:32; 2:50-54, 25:5-12. Kahn discloses that its invention “can be used in conjunction with other fluids, such as natural gas.” EX1005, 17:67-18:2.

A POSITA would recognize that Kahn discloses the recited system. EX1002, ¶40. Thus, Kahn discloses the recited system.

- b. **[1.2] a computer-implemented datastore storing:**

Kahn discloses a data collection network with centralized data collection points. *See, e.g.*, EX1005, 8:51-59, 9:53-58, 17:18-30, 18:48-52, 63-65, 19:5-23,

19:58-65, 23:27-31. Kahn discloses that the centralized data collection point is a server. EX1005, 10:52-61, 23:27-31. Kahn discloses that servers are computers, i.e. include processors. EX1005, 32:58-63.

A POSITA would recognize that Kahn discloses storing records, with one or more processors through its disclosure of centralized data collection points. EX1002, ¶42. Therefore, Kahn discloses storing records, with one or more processors.

- c. **[1.3] a plurality of accounts, each account corresponding to an entity operating one or more geographically distributed oil or gas facilities, the accounts associating different oil or gas facilities with different entities; and**

Kahn discloses that centralized data collection points connect to sensor unit 110 at designated facilities from different entities, i.e. “accounts.” *See, e.g.*, EX1005, 16:40-18:52, 25:5-12. A hallmark of the distribution system in Kahn is the ability to identify the location of and communicate with the system’s sensor units. EX1005, 4:12-25, 11:2-15; *see also* EX1005, 10:8-13; 23:51-62. Kahn discloses a user interface showing data from geographically distributed fluid handling facilities from multiple different entities. EX1005, Abstract, 2:50-54, 25:5-12.

A POSITA would recognize that Kahn discloses a plurality of accounts, namely one or more geographically distributed fluid-handling facilities with different entities. EX1002, ¶43.

Therefore, Kahn discloses the plurality of accounts recited in the ’014 Patent.

- d. [1.4] network addresses by which industrial monitoring or control equipment at the facilities is accessible via cellular network connections, the monitoring or control equipment including sensors or actuators;**

Kahn discloses that the production sites are unique, disclosing separate control systems for designated location. *See, e.g.*, EX1005, 16:40-18:52. For example, Sensor unit 110 can be located at any desired point in a fluid distribution system. *See, e.g.*, EX1005, 11:2-15.

Kahn discloses a system with Sensor unit 110 that includes multiple sensors (e.g., first sensor 111A and second sensor 111B) and a communication unit that connects via a network to centralized data collection points. *See, e.g.*, EX1005, 5:62-6:16, 9:37-43, 10:18-67, 13:46-52, 17:18-30, 18:40-19:2, 19:5-20:39, 22:12-20, 23:22-50, FIG. 1A, FIG. 3. Kahn discloses monitoring and control equipment including one or more actuators configured to manipulate fluid flow at respective fluid-handling facilities. *See, e.g.*, EX1005, 10:62-67; *see also id.*, 14:35-15:2 (“one or more actuators”), 15:62-16:32 (describing an actuator for each sensor 111).

A POSITA would recognize that Kahn discloses the addresses for facilities accessible by the network, as well as the monitoring and control equipment as recited in the '014 Patent. EX1002, ¶¶44-45. Therefore, Kahn discloses this limitation of the '014 Patent.

- e. [1.5] a computer-implemented facility-interface module or modules configured to obtain data from the sensors at the facilities and send commands to the actuators at the facilities via the cellular network connections; and**

Kahn discloses a facility interface module, Sensor unit 110, including a processor that connects via a network to centralized data collection points. *See, e.g.*, EX1005, 5:62-6:2, 9:37-43, 10:18-67, 13:46-52, 17:18-30, 18:40-19:2, 19:5-20:39, 22:12-20, 23:22-50, FIG. 1A, FIG. 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.*, EX1005, 10:62-67; *see also* EX1005, 14:35-15:2, 15:62-16:32.

A POSITA would recognize that Kahn discloses the facility interface module as recited in the '014 Patent. EX1002, ¶48. Therefore, Kahn discloses this limitation of the '014 Patent.

- f. **[1.6] a computer-implemented web-interface module or modules configured to send instructions to present control interfaces in web browsers executing on user computing devices logged in to the accounts and to receive commands to control actuators from the user computing devices,**

Kahn discloses a system that includes a remote computing system with a processor displaying a graphical user interface (GUI) showing data from the system's sensors. EX1005, Abstract, 1:28-36, 2:50-3:2, 25:5-25, 25:48-26:19, 28:8-25, 29:5-37. Kahn discloses that users log into the system on respective user computing devices. *See, e.g.*, EX1005, 2:50-45, 25:5-12, 28:35-37, 30:45-49. Kahn discloses a variety of users and entities having different levels of authorized access. EX1005, 25:48-26:67, *see also id.*, 2:50-60, 19:58-65, 21:50-22:44, 22:62-23:50,

24:44-25:2, 25:5-12, 27:39-28:7.

Kahn further discloses that sensor unit 110 includes communication equipment with actuators configured to manipulate fluid flow at respective fluid-handling facilities, to facilitate the measurement of data requested through the graphical user interface. *See, e.g.*, EX1005, 10:62-67; *see also id.*, 14:35-15:2, 15:62-16:32.

A POSITA would recognize that Kahn discloses the web interface module, as recited in the '014 Patent. EX1002, ¶52. Therefore, Kahn discloses this limitation of the '014 Patent.

- g. [1.7] wherein the system is configured to receive, with the web-interface module or modules, a user command to actuate an actuator entered via a presented control interface, identify a network address in the datastore corresponding to a facility at which the actuator is located, and send instructions with the facility-interface module or modules to the facility to actuate the actuator, and**

Kahn discloses a system that includes a remote computing system with a processor displaying a graphical user interface (GUI) showing data from the system's sensors. EX1005, Abstract, 1:28-36, 2:50-3:2, 25:5-25, 25:48-26:19, 28:8-25, 29:5-37. Kahn further discloses that sensor unit 110 includes communication equipment with actuators configured to manipulate fluid flow at respective fluid-handling facilities and to facilitate the measurement of data requested through the graphical user interface. *See, e.g.*, EX1005, 10:62-67; *see also id.*, 14:35-15:2, 15:62-16:32.

Kahn discloses that the production sites are unique, disclosing separate control systems for designated facility locations. *See, e.g.*, EX1005, 16:40-18:52. For example, Sensor unit 110 can be located at any desired point in a fluid distribution system. *See, e.g.*, EX1005, 11:2-15. A hallmark of the distribution system in Kahn is the ability to identify the location of and communicate with the system's sensor units. EX1005, 4:12-25; *see also id.*, 10:8-13; 23:51-62.

A POSITA would recognize that Kahn discloses receiving with the user interface module a user command to actuate an actuator of the fluid handling system, as recited in the '014 Patent. EX1002, ¶¶56-57.

A POSITA would recognize that Kahn discloses identifying an address in the datastore corresponding to the facility at which the actuator is located, as recited in the '014 Patent, because the disclosed GUI enables the user to control a designated component of the system. *Id.*

A POSITA would recognize that Kahn discloses sending instructions to the facility interface module to actuate the fluid handling system's actuator, as recited in the '014 Patent. *Id.*

Therefore, Kahn discloses this limitation of the '014 Patent.

- h. [1.8] wherein: the plurality of accounts include a first account, a second account, a third account, and a fourth account;**

Kahn discloses a plurality of accounts, i.e., geographically distributed facilities for the transport of fluids, as shown above for element 1.3, and incorporated

herein.

Kahn discloses an “authorized account A” for “a first entity” “to access aspects of first fluid test data.” EX1005, 25:48-26:67. Kahn further discloses an “authorized account B” for “a second entity” “to access aspects of second fluid test data.” *Id.* The “first and second entities can control access to data generated by their respective sensors.” *Id.* Thus, “separate entities provide their fluid test data to the computer system 4 controlled by the service provider (an entity different from the first and second entities), and the first and second entities can control access to data generated by their respective sensors.” *Id.* Entities also “grant authorization to visualize [data] generated by them to others beyond themselves, such as government health organizations or security organizations such as the Department of Homeland Security.” *Id.*

A POSITA would recognize Kahn discloses a plurality of accounts, as recited in the '014 Patent. EX1002, ¶59. Therefore, Kahn discloses this limitation of the '014 Patent.

- i. **[1.9] the first account corresponds to a first group of oil or gas facilities, users of the first account being authorized to send commands to remotely control fluid handling devices at the first group of oil or gas facilities;**

Kahn discloses a variety of users and entities having different levels of authorized access. EX1005, 25:48-26:67, *see also id.*, 2:50-60, 19:58-65, 21:50-22:44, 22:62-23:50, 24:44-25:2, 25:5-12, 27:39-28:7. 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.*, EX1005, 10:62-67; *see also id.*, 14:35-15:2, 15:62-16:32.

A POSITA would recognize that Kahn discloses a plurality of accounts with varying degrees of access to designated systems, wherein a first group (authorized account A) has access to control a first group of fluid handling facilities, as recited in the '014 Patent. EX1002, ¶60. Therefore, Kahn discloses this limitation of the '014 Patent.

- j. [1.10] the second account corresponds to a second group of oil or gas facilities, the first group being different from the second group, users of the second account being authorized to send commands to remotely control fluid handling devices at the second group of oil or gas facilities;**

As detailed above for element 1.9, and incorporated herein by reference, Kahn discloses a variety of users and entities having different levels of authorized access to data or control at respective fluid-handling facilities.

A POSITA would recognize that Kahn discloses a plurality of accounts with varying degrees of access to designated systems, wherein a second group (authorized account B) has access to control a second group of fluid handling facilities, as recited in the '014 Patent. EX1002, ¶61. Therefore, Kahn discloses this limitation of the '014 Patent.

- k. [1.11] the third account corresponds to the first group of oil or gas facilities, users of the third account being authorized to view reports of data from fluid handling devices at the first group of oil or gas facilities; and**

Kahn discloses a variety of users and entities having different levels of

authorized access. EX1005, 25:48-26:67, *see also id.*, 2:50-60, 19:58-65, 21:50-22:44, 22:62-23:50, 24:44-25:2, 25:5-12, 27:39-28:7.

A POSITA would recognize that Kahn discloses a plurality of accounts with varying degrees of access to designated systems, wherein a third group (service provider) has access to view data from a first group of fluid handling facilities, as recited in the '014 Patent. EX1002, ¶62. Therefore, Kahn discloses this limitation of the '014 Patent.

- 1. [1.12] the fourth account corresponds to the second group of oil or gas facilities, users of the fourth account being authorized to view reports of data from fluid handling devices at the second group of oil or gas facilities.**

As detailed above for element 1.11, and incorporated herein by reference, Kahn discloses a variety of users and entities having different levels of authorized access.

A POSITA would recognize that Kahn discloses a plurality of accounts with varying degrees of access to designated systems, wherein a fourth group (government health or security organizations such as the Department of Homeland Security) has access to view data from a second group of fluid handling facilities, as recited in the '014 Patent. EX1002, ¶¶63-64. Therefore, Kahn discloses this limitation of the '014 Patent.

Claim 1 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

## 2. Claim 4

- a. **[4.1] The system of claim 1, wherein the sensors include a leak detector at one of the facilities, and wherein the datastore includes a record associating the leak detector with the facility.**

Kahn discloses a user interface showing data from geographically distributed fluid handling facilities from multiple different entities. EX1005, Abstract, 2:50-54, 25:5-12. A hallmark of the distribution system in Kahn is the ability to identify the location of and communicate with the system's sensor units. EX1005, 4:12-25, 11:2-15.

Kahn's geographically distributed and uniquely identified sensors, e.g., detect leaks in the fluid handling facilities. EX1005, 10:8-13 ("Physical events, such as a breakage of a pipe might be detected . . . thereby identifying the exact location or proximate location of the breakage.").

A POSITA would recognize that Kahn discloses a leak detector at a fluid-handling facility. EX1002, ¶66.

Thus, Claim 4 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

## 3. Claim 5

- a. **[5.1] The system of claim 1, wherein: the web-interface module or modules comprises a web server; and**

Kahn discloses a data collection network with centralized data collection points. *See, e.g.*, EX1005, 8:51-59, 9:53-58, 17:18-30, 18:48-52, 63-65, 19:5-23,

19:58-65, 23:27-31. Kahn discloses that the centralized data collection point is a server. EX1005, 10:52-61, 23:27-31. Kahn discloses that servers are computers, i.e. include processors. EX1005, 32:58-63.

A POSITA would recognize that Kahn discloses the web-interface module or modules comprises a web server. EX1002, ¶67. Therefore, Kahn discloses this limitation of the '014 Patent.

**b. [5.2] the facility-interface module or modules comprises a site server distinct from the web server.**

Kahn discloses a system with Sensor unit 110 that connects via a network to centralized data collection points. *See, e.g.*, EX1005, 5:62-6:2, 9:37-43, 10:18-67,13:46-52, 17:18-30, 18:40-19:2, 19:5-20:39, 22:12-20, 23:22-50, FIG. 1A, FIG. 3.

Kahn further discloses that the network of sensor units 110 can be configured to communicate with a central communication device, *e.g.*, a server, and/or sensor unit 110 can communicate with each other as a distributed network. EX1005, 10:54-56.

A POSITA would recognize that Kahn discloses the facility-interface module or modules comprises a web server, as recited in the '014 Patent, because sensor unit 110 can communicate with each other in a distributed network with each sensor unit 110 operating as a server. EX1002, ¶68. Therefore, Kahn discloses this limitation of the '014 Patent.

Claim 5 is anticipated by Kahn, or would be obvious to a POSITA in view of

Kahn.

**4. Claim 6**

- a. [6.1] The system of claim 5, wherein: the web server communicates with user devices via a first network port of a computing device executing the web server; and**

Kahn discloses that the centralized data collection points are a server using multiple communication components known in the art. EX1005, 10:54-56, 23:29-30.

A POSITA would recognize that Kahn discloses web server is configured to communicate with user devices via a first network port of a computing device executing the web server, as recited in the '014 Patent, because Kahn discloses that the server communicates using communication components known in the art that would include a first network port. EX1002, ¶69. Therefore, Kahn discloses this limitation of the '014 Patent.

- b. [6.2] the site server communicates with facilities via a second network port of the computing device, the second network port being different from the first network port.**

Kahn discloses that the sensor units 110 are a server using multiple communication components known in the art. EX1005, 10:54-56, 23:29-30.

A POSITA would recognize that Kahn discloses a site server configured to communicate via a second network port, as recited in the '014 Patent, because Kahn discloses that sensor units 110 communicate using communication components

known in the art that would include a second network port. EX1002, ¶70.

Therefore, Kahn discloses this limitation of the '014 Patent.

Claim 6 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

## 5. Claim 7

- a. **[7] The system of claim 1, wherein: the data store stores subscription information associated with at least some of the accounts.**

Kahn discloses that the sensor units 110 can be associated with subscription information, including access for authorities monitoring the fluids, reporting of particular detected events, or billing information. EX1005, 22:12-44.

A POSITA would recognize that Kahn discloses the data store is configured to store subscription information associated with at least some of the accounts, as recited in the '014 Patent EX1002, ¶71. Therefore, Kahn discloses this limitation of the '014 Patent.

Claim 7 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

## 6. Claim 8

- a. **[8] The system of claim 1, wherein the facility-interface module or modules comprise: means for interfacing with a plurality of site controllers associated with the facilities.**

Kahn discloses a facility interface module, Sensor unit 110, including a processor that connects via a network to centralized data collection points. *See, e.g.,*

EX1005, 5:62-6:2, 9:37-43, 10:18-67, 13:46-52, 17:18-30, 18:40-19:2, 19:5-20:39, 22:12-20, 23:22-50, FIG. 1A, FIG. 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.*, EX1005, 10:62-67; *see also id.*, 14:35-15:2, 15:62-16:32.

A POSITA would recognize that Kahn discloses the facility-interface module or modules comprise: means for interfacing with a plurality of site controllers associated with the facilities as recited in the '014 Patent. EX1002, ¶72. Therefore, Kahn discloses this limitation of the '014 Patent.

Claim 8 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

## 7. Claim 9

- a. **[9] The system of claim 1, wherein the web-interface module or modules comprise: means for sending instructions to present a control interface on the user devices.**

Kahn discloses a system that includes a remote computing system with a processor displaying a graphical user interface (GUI) that when activated by a user shows data from the system's sensors. EX1005, Abstract, 1:28-36, 2:50-3:2, 25:5-25, 25:48-26:19, 28:8-25, 29:5-37. Kahn further discloses that sensor unit 110 includes communication equipment with actuators configured to manipulate fluid flow at respective fluid-handling facilities, to facilitate the measurement of data requested through the graphical user interface. *See, e.g.*, EX1005, 10:62-67; *see also*

*id.*, 14:35-15:2, 15:62-16:32.

A POSITA would recognize that Kahn discloses a GUI control interfaces on a user computer device for reviewing data from the system's sensor or sending commands to control fluid handling system actuators, as recited in the '014 Patent. EX1002, ¶73. Therefore, Kahn discloses this limitation of the '014 Patent.

Claim 9 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

## 8. Claim 10

- a. **[10] The system of claim 1, wherein the datastore stores accounts for more than one hundred facilities, and the web-interface module or modules are configured interface with more than one hundred user devices.**

It would have been within the ordinary skill of a POSITA to scale the processes and equipment of claim 1 to accommodate over 100 facilities or over 100 user devices without undue experimentation. Kahn suggests no limits on the number of users and facilities. Instead, Kahn discloses support for large numbers of users and facilities. EX1005, 18:49-52 (“the drawings should not be relied upon for judging orders of magnitude or the number of sensor units 110, smart nodes, 332, or centralized data collection points.”); 24:52-58 (“given the large numbers of such existing sales or service entities [users], and given the low cost of portable sensor units [] water quality data can be obtained from large geographic areas encompassing complex water distribution systems [large numbers of facilities] with relative ease and minimal cost.”); 26:29-33 (“the web-based application

service can be provided [] without limitation on the number of test results communicated to the service”).

Kahn, therefore, anticipates or renders obvious to a POSITA Claim 10. EX1002, ¶74.

## 9. Claim 11

- b. [11] **The system of claim 1, wherein the facility-interface module or modules are configured to send pull requests to facilities to retrieve data buffered at the facilities.**

Kahn discloses a system that includes a remote computing system with a processor displaying a graphical user interface (GUI) showing data from the system’s sensors. EX1005, Abstract, 1:28-36, 2:50-3:2, 25:5-25, 25:48-26:19, 28:8-25, 29:5-37. Kahn further discloses that sensor unit 110 includes communication equipment with actuators configured to manipulate fluid flow at respective fluid-handling facilities, and to facilitate the measurement of data requested by the user through the graphical user interface, i.e. in a pull request. *See, e.g.*, EX1005, 10:62-67; *see also id.*, 14:35-15:2, 15:62-16:32.

A POSITA would recognize that Kahn discloses the facility-interface module or modules are configured to send pull requests to facilities to retrieve data buffered at the facilities upon the request of a user, as recited in the ’014 Patent. EX1002, ¶75.

Claim 25 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

**10. Claim 12**

- a. **[12] The system of claim 1, comprising: a controller at one of the facilities communicatively coupled to an actuator or a sensor.**

Kahn discloses a system with Sensor unit 110 that includes multiple sensors (e.g., first sensor 111A and second sensor 111B) and a communication unit that connects via a network to centralized data collection points. *See, e.g.*, EX1005, 5:62-6:16, 9:37-43, 10:18-67, 13:46-52, 17:18-30, 18:40-19:2, 19:5-20:39, 22:12-20, 23:22-50, FIG. 1A, FIG. 3.

Kahn discloses monitoring and control equipment including one or more actuators configured to manipulate fluid flow at respective fluid-handling facilities. *See, e.g.*, EX1005, 10:62-67; *see also id.*, 14:35-15:2 (“one or more actuators”), 15:62-16:32 (describing an actuator for each sensor 111).

A POSITA would recognize that Kahn discloses the addresses for facilities accessible by the network, as well as the monitoring and control equipment as recited in the '014 Patent. EX1002, ¶76. Therefore, Kahn discloses this limitation of the '014 Patent.

Claim 12 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

**11. Claim 13**

A POSITA would recognize that Kahn discloses software applications written or described in any appropriate computer language including HTML, Java, and

XML, among others. EX1002, ¶78, and EX1005, 28:8-26, *see also* EX1005, 33:31-43.

The '014 Patent's specification lacks disclosure of "instantiation" and fails to provide any details regarding "threads," aside from reciting the term and use of JavaScript instructions. EX1001, 3:53-54, 8:22-39.

**a. [13.1] The system of claim 12, wherein the system is configured to instantiate at least four of the following as distinct threads from one another:**

A POSITA would recognize that Kahn inherently discloses instantiation of threads, and the various thread implementations recited in Claim 26, through computer coding in computer languages such as Java. EX1002, ¶80.

A POSITA would recognize that Kahn inherently discloses instantiation of threads, as recited in the '014 Patent, from its disclosure of software or applications written in then-current computer languages, including Java. *Id.* Therefore, Kahn discloses this limitation of the '014 Patent.

**b. [13.2] a thread configured to sends and receive data requests;**

Kahn discloses a data collection network with centralized data collection points. See, e.g., EX1005, 8:51-59, 9:53-58, 17:18-30, 18:48-52, 63-65, 19:5-23, 19:58-65, 23:27-31.

A POSITA would recognize that Kahn inherently discloses a thread configured to send and receive data requests, as recited in the '014 Patent, from its disclosure of software or applications written in then-current computer languages,

including Java. EX1002, ¶81. Therefore, Kahn discloses this limitation of the '014 Patent.

**c. [13.3] a thread configured to synchronize other threads with updated information;**

A POSITA would recognize that Kahn inherently discloses a thread configured to synchronize other threads with updated information, as recited in the '014 Patent, from its disclosure of software or applications written in then-current computer languages, including Java. EX1002, ¶82. Therefore, Kahn discloses this limitation of the '014 Patent.

**d. [13.4] a thread configured to set a target state of actuators;**

Kahn discloses that sensor unit 110 includes communication equipment with actuators configured to manipulate fluid flow by setting a target state for actuators at respective fluid-handling facilities. *See, e.g.*, EX1005, 8:3-11, 8:21-24, 10:62-67; *see also id.*, 14:35-15:2, 15:62-16:32, 34:7-12.

A POSITA would recognize that Kahn inherently discloses a thread configured to set a target state of actuators, as recited in the '014 Patent, from its disclosure of software or applications written in then-current computer languages, including Java. EX1002, ¶84. Therefore, Kahn discloses this limitation of the '014 Patent.

**e. [13.5] a thread configured to obtain updated sensor readings;**

Kahn discloses a data collection network with centralized data collection

points. See, e.g., EX1005, 8:51-59, 9:53-58, 17:18-30, 18:48-52, 63-65, 19:5-23, 19:58-65, 23:27-31. Kahn discloses that the centralized data collection points receive sensor information via a network from a facility interface module, Sensor unit 110. See, e.g., *id.*, 5:62-6:2, 9:37-43, 10:18-67, 13:46-52, 17:18-30, 18:40-19:2, 19:5-20:39, 22:12-20, 23:22-50, FIG. 1A, FIG. 3.

A POSITA would recognize that Kahn inherently discloses a thread configured to obtain updated sensor readings, as recited in the '014 Patent, from its disclosure of software or applications written in then-current computer languages, including Java. EX1002, ¶85. Therefore, Kahn discloses this limitation of the '014 Patent.

**f. [13.6] a thread configured to process user interactions; and**

A POSITA would recognize that Kahn inherently discloses a thread configured to process user interactions, as recited in the '014 Patent, from its disclosure of software or applications written in then-current computer languages, including Java. EX1002, ¶86. Therefore, Kahn discloses this limitation of the '014 Patent.

**g. [13.7] a thread that eliminates other threads upon detecting a problem with the eliminated threads**

A POSITA would recognize that Kahn inherently discloses a thread that eliminates other threads upon detecting a problem with the eliminated threads, as recited in the '014 Patent, from its disclosure of software or applications written in then-current computer languages, including Java. EX1002, ¶87. Therefore, Kahn

discloses this limitation of the '014 Patent. Therefore, a POSITA would understand that Kahn inherently discloses the elements recited in Claim 13.

Claim 13 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

## **12. Claim 14**

- a. [14.1] The system of claim 12, wherein the system is configured to instantiate at least two of the following as distinct threads from one another:**

A POSITA would recognize that Kahn discloses software applications written or described in any appropriate computer language including HTML, Java, and XML, among others. EX1002, ¶89 and EX1005, 28:8-26, *see also id.*, 33:31-43.

The '014 Patent's specification lacks disclosure of "instantiation" and fails to provide any details regarding "threads," aside from reciting the term and use of JavaScript instructions. EX1001, 3:53-54, 8:22-39.

Kahn inherently discloses instantiating each and every one of specifically recited threads in elements 14.2-14.7, or this limitation would be obvious to a POSITA in view of Kahn, as discussed above for these elements in Claim 13 and incorporated herein.

Therefore, a POSITA would understand that Kahn inherently discloses the elements recited in Claim 14. EX1002, ¶90; *see also id.*, ¶¶91-95. Claim 14 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

## **13. Claim 15**

- a. **[15] The system of claim 12, wherein the controller is communicatively coupled to the actuator or sensor via a private local area network.**

Kahn discloses coupling the system's components, e.g. controller and sensor units, with a private network. EX1005, 10:18-48, 19:34-57.

A POSITA would recognize that Kahn discloses communicating with a controller at one of the facilities to control and actuator or read from a sensor via a private local area network. EX1002, ¶96.

Claim 15 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

#### **14. Claim 16**

- a. **[16] The system of claim 12, wherein controller is communicatively coupled to the actuator or sensor via a frame-based carrier-sense multiple access protocol with collision detection.**

Kahn discloses coupling the system's components, e.g. controller and sensor units, with a standard network including ethernet. EX1005, 10:18-48, 19:34-57.

A POSITA would recognize that Kahn discloses a frame-based carrier-sense multiple access protocol with collision detection because a POSITA would know that frame-based carrier-sense multiple access protocol with collision detection, as recited in the '014 Patent, is an Ethernet networking technology. EX1002, ¶¶106-107.

A POSITA would recognize that Kahn discloses communicating with a controller at one of the facilities to control and actuator or read from a sensor via a

private local area network that uses a frame-based carrier-sense multiple access protocol with collision detection. *Id.*

Claim 16 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

### 15. Claim 17

- a. **[17] The system of claim 12, wherein controller is configured to periodically push buffered data to the facility-interface module or modules.**

Kahn discloses that data, such as chemical fingerprint information “downloaded into,” i.e. pushed into, the sensor units, with intermittent updates available from the centralized data collection points. EX1005, 9:48-10:7

A POSITA would recognize that Kahn discloses buffering data from sensors with the controller and pushing, with the controller, buffered data to the facility-interface module or modules. EX1002, ¶110.

Claim 17 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

### 16. Claim 18

- a. **[18] The system of claim 12, comprising: means for ensuring at least some data is not lost if network access ceases intermittently.**

Kahn discloses that data collection can run in real time, and can continuously, or intermittently (e.g., periodically at pre-set time intervals) monitor fluid quality, or upon inquiry, or operate based on stored data at the sensor sites

110A-110F, depending on the data storage and communication capabilities of the sensor units 110. EX1005, 19:24-33; 29:47-50 (“If a wireless communication is not currently available, the measurement can be stored in the handheld unit until a wireless link is established.”).

A POSITA would recognize that Kahn discloses steps for ensuring at least some data is not lost if network access ceases intermittently because sensor units 110 include data storage and allow for intermittent transmission of data. EX1002, ¶¶112-113.

Claim 18 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

## 17. Claim 21

- a. **[21] The system of claim 12, comprising: means for transmitting data to the facility-interface module or modules.**

Kahn discloses a system that includes a remote computing system with a processor displaying a graphical user interface (GUI) showing data from the system’s sensors. EX1005, Abstract, 1:28-36, 2:50-3:2, 25:5-25, 25:48-26:19, 28:8-25, 29:5-37. Kahn discloses a facility interface module, Sensor unit 110, including a processor that connects via a network to centralized data collection points. *See, e.g.*, EX1005, 5:62-6:2, 9:37-43, 10:18-67, 13:46-52, 17:18-30, 18:40-19:2, 19:5-20:39, 22:12-20, 23:22-50, FIG. 1A, FIG. 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.*, EX1005, 10:62-67; *see also id.*, 14:35-15:2, 15:62-16:32.

A POSITA would recognize that Kahn discloses the control interfaces on a user computer device sending commands to control fluid handling system actuators, as recited in the '014 Patent. EX1002, ¶116. Therefore, Kahn discloses this limitation of the '014 Patent.

Claim 21 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

## **18. Claim 22**

### **a. [22] The system of claim 12, comprising: means for checking validity of a command.**

Kahn discloses verification of data collected based on a command. EX1005, 29:40-50 (“The fluid test data associated with a given measurement can be initiated by a suitable push-button stroke and/or navigating a suitable menu on the display of the sensor unit. When the measurement is completed it can be “accepted” by a suitable menu navigation and/or push button stroke. When accepted, the measurement result is automatically transmitted via wireless communication to the computer system 4 (see FIG. 5) along with the handheld sensor unit's unique identifier.”); 32:10-17 (“some sources can be locked out, such that data from those sources is recorded but is not regarded as accepted data for general visualization, some sources can be flagged as needing approval before their data is accepted for general visualization, and some sources can be flagged as certified such that their

data is accepted for visualization without approval.”)

A POSITA would recognize that Kahn discloses the means for checking validity of a command because Kahn discloses checking the validity of data resulting from a command, as recited in the '014 Patent. EX1002, ¶119. Therefore, Kahn discloses this limitation of the '014 Patent.

Claim 22 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

### **19. Claim 23**

- a. [23] The system of claim 12, comprising: an oil or gas facility communicatively coupled to the controller.**

Kahn discloses hosted, web-based, remote industrial monitoring and control system for geographically distributed facilities. *See, e.g.*, EX1005, Abstract, 10:62-67; 14:35-15:2, 15:62-16:32; 2:50-54, 25:5-12. Kahn discloses that its invention “can be used in conjunction with other fluids, such as natural gas.” EX1005, 17:67-18:2.

A POSITA would recognize that Kahn discloses an oil or gas facility communicatively coupled to the controller. EX1002, ¶121. Thus, Kahn discloses the recited system.

Claim 23 is anticipated by Kahn, or would be obvious to a POSITA in view of Kahn.

- B. Ground 2: Kahn in view of Gutierrez renders obvious Claims 1-5, 8-10, 12-16, 18-21, and 23.**

Independent claim 1 and dependent claims 2-5, 8-9, 12-16, 18-21, and 23 are obvious to a POSITA over U.S. Patent No. 7,424,399 (“Kahn”) in view of U.S. Patent 9,709,995 (“Gutierrez”) under 35 U.S.C. §103.

The disclosures of Kahn for each claim challenged under Ground 1, above, are incorporated by reference into each challenged claim herein.

### **1. Motivation to Combine Gutierrez and Kahn**

A POSITA would be motivated to Gutierrez and Kahn. EX1002, ¶¶122-28. See *Allergan, Inc. v. Sandoz, Inc.*, 726 F.3d 1286, 1292 (Fed. Cir. 2013); *Alza Corp. v. Mylan Labs., Inc.*, 464 F.3d 1286, 1294 (Fed. Cir. 2006) (motivation to combine may be implicitly stated in the prior art and supported by testimony of an expert witness regarding knowledge of a POSA.) As Dr. Wooley explains in his declaration, combining Gutierrez and Kahn would have been obvious to try because both references describe similar systems for remote monitoring and control of fluid handling facilities. *Id.* A POSITA would have referred to Gutierrez for its disclosure of a general fluid handling system for oil and oil extraction wastewater storage and transport, which allows remote users to monitor and control fluid handling facilities. EX1006, 1:26-27; EX1002, ¶¶122-128. A POSITA would understand that the pipelines and transport systems of Gutierrez would involve multiple operators and site geographically dispersed site locations, each responsible for the efficient and safe operation of the fluid handling systems. EX1002, ¶¶122-128. A POSITA would

further understand that supervisors, regulators, etc. would require access to data from the systems, thus different levels of access to data or control of the fluid handling systems would be expected by a POSITA. *Id.*

A POSITA would have referred to Kahn, and its disclosure of specific user differentiation features for fluid handling facilities, with different users having specified access only to designated data or controls. *Id.* A POSITA would also recognize that Kahn's disclosure similarly relates to gas facilities. EX1005, 17:67-18:2; EX1002, ¶¶122-128.

A POSITA would have been motivated to combine Gutierrez and Kahn because Kahn provides additional detailed disclosure regarding user differentiation, which a POSITA would implement as a standard security practice in any remote systems having multiple facilities and users. EX1002, ¶¶122-128. Differentiating the access allowed to different users, and limiting users' access to only designated facilities and functions, would motivate a POSITA to combine Gutierrez and Kahn to achieve the security, efficiency, and safety benefits limiting access provides across the system. *Id.*

Combining Gutierrez and Kahn would lead to predictable results for users of the systems and methods of Gutierrez having predetermined levels of access to view data or control only designated systems. *Id.* A POSITA would not have difficulty combining Gutierrez and Kahn, because Gutierrez and Kahn do not describe alternative systems or methods, but rather the disclosure of Kahn merely provides

additional detail rather than a different approach to solving problems in the underlying technology. *Id.*

**2. Claim 1**

- a. [1.1] A hosted, web-based, remote industrial monitoring and control system for geographically distributed facilities in oil and gas fields, the system comprising:**

To the extent that the Board finds that the preamble is limiting, Gutierrez discloses hosted, web-based, remote industrial monitoring and control system for geographically distributed oil and gas fluid handling facilities. *See, e.g.*, EX1006, Abstract, 1:14-50.

A POSITA would recognize that Gutierrez discloses a hosted, web-based, remote industrial monitoring and control system for geographically distributed facilities in oil and gas fields. EX1002, ¶129. Thus, Gutierrez discloses the recited system.

- b. [1.2] a computer-implemented datastore storing:**

Gutierrez discloses that chemical injection system 100 may be utilized in a hydrocarbon production system, such as, for example, a field or area having one or more hydrocarbon (e.g., oil, natural gas) production sites. EX1006, 6:55-7:2. Chemical injection system 100 includes a pump 105 mechanically coupled to a driver, such as a motor 110; a motor controller 115; and a controller 130. EX1006, 6:46-49. Controller 130 provides microprocessor-based control of the motor controller 115 and thus motor 110 and pump 105. EX1006, 8:15-19. Controller 130

includes a communication module 140, data acquisition, data storage, and a processor 150. EX1006, 8:19-21; *see also id.*, 8:39-9:3.

A POSITA would recognize that Gutierrez discloses controller 130 which includes a processor and data storage for records related to hydrocarbon production facilities. EX1002, ¶130. Therefore, Gutierrez discloses this element of the '014 Patent.

- c. **[1.3] a plurality of accounts, each account corresponding to an entity operating one or more geographically distributed oil or gas facilities, the accounts associating different oil or gas facilities with different entities; and**

Gutierrez discloses chemical injection system 100 in a hydrocarbon production system, such as, for example, a field or area having one or more hydrocarbon (e.g., oil, natural gas) production sites. EX1006, 6:55-7:2; *see also id.*, 5:22-26; 6:24-27; 10:22-38. Gutierrez discloses that the production sites are unique, disclosing control systems for “each.” EX1006, 6:28-35; 10:22-24, 10:34-38, 10:43-59 (“data may be wirelessly transmitted directly to each chemical injection system . . . some or all of the processing of data and command generation may occur at the remote control center 220 rather than each individual chemical injection system 220.”), 11:55-61 (“each computer 305 may monitor, receive data from, and/or generate commands transmitted to a single chemical injection system 310 or multiple chemical injection systems 310.”), 11:62-12:3, 13:10-26 (“a user or operator may utilize the GUI 315 to control one or more components of the chemical

injection system 310”); Claim 1.

Gutierrez discloses a hydrocarbon transmission system including one or more chemical injection systems for relative distances between production sites and pipeline monitoring locations to efficiently inject chemical additives into the system without waste. EX1006, 5:22-31; *see also id.*, 3:49-4:4, 4:50-63, 6:24-44 (“a hydrocarbon transmission system includes a pipeline adapted to enclose a fluid transmitted from a plurality of hydrocarbon production sites to a processing site and a plurality of chemical injection systems”), 6:45-58, 10:22-24 (“System 200 includes one or more hydrocarbon production sites 215, each of which is fluidly coupled to a pipeline 205.”), 11:37-42.

A POSITA would recognize that Gutierrez discloses a plurality of accounts, namely geographically distributed fluid-handling facilities. EX1002, ¶133. A POSITA would further recognize from Gutierrez that the disclosed geographically distributed accounts associate fluid-handling facilities from different entities because Gutierrez discloses systems with multiple fluid-handling facilities, as well as geographically distributed systems with multiple types of fluid-handling facilities, including production sites and pipeline monitoring locations. *Id.*

Therefore, Gutierrez discloses the plurality of accounts recited in the ’014 Patent.

- d. **[1.4] network addresses by which industrial monitoring or control equipment at the facilities is accessible via cellular network connections, the monitoring or control equipment**

**including sensors or actuators;**

Gutierrez discloses that the production sites are uniquely addressable by the network connection through individualized control systems for “each.” EX1006, 6:28-35; 10:22-24, 10:34-38, 10:43-59 (“data may be wirelessly transmitted directly to each chemical injection system . . . some or all of the processing of data and command generation may occur at the remote control center 220 rather than each individual chemical injection system 220.”), 11:55-61 (“each computer 305 may monitor, receive data from, and/or generate commands transmitted to a single chemical injection system 310 or multiple chemical injection systems 310.”), 11:62-12:3, 13:10-26 (“a user or operator may utilize the GUI 315 to control one or more components of the chemical injection system 310”); Claim 1.

Gutierrez discloses monitoring and control equipment including sensors configured to measure fluid handled at respective fluid-handling facilities. EX1006, 9:4-13 (“one or more electronic sensors monitoring the pipeline”); 9:21-25 (“wireless sensors may detect various operations parameters of the pipeline 120, such as line pressure and/or chemical concentrate”), 10:7-16 (“a wireless pressure sensor”), 10:40-46, 13:12-17.

Gutierrez discloses monitoring and control equipment including actuators configured to manipulate fluid flow at respective fluid-handling facilities. *See, e.g.*, EX1006, 6:45-8:38 (describing chemical injection system with controllers for activating pumps to manipulate fluid flow), 9:54-10:16, 11:62-12:29, 13:23-26.

Gutierrez discloses fluid-handling facilities having sets of both sensors and actuators. EX1006, 6:45-7:2, 9:65-10:16, 10:17-11:4, 11:16-33, 11:55-61 (“each computer 305 may monitor, receive data from, and/or generate commands transmitted to a single chemical injection system 310 or multiple chemical injection systems 310”), 13:9-26.

A POSITA would recognize that Gutierrez discloses the addresses for facilities, and the monitoring and control equipment as recited in the '014 Patent. EX1002, ¶138. Therefore, Gutierrez discloses this limitation of the '014 Patent.

- e. **[1.5] a computer-implemented facility-interface module or modules configured to obtain data from the sensors at the facilities and send commands to the actuators at the facilities via the cellular network connections; and**

Gutierrez discloses fluid-handling facilities with computers or controllers that take data from sensors and send commands to actuators. EX1006, 6:45-7:2, 8:16-38 (“controller 130 includes a communication module 140 . . . and a processor 150. . . controller 130 receives inputs and/or instructions and commands from a remote source and, according to the commands, controls the operation and/or speed of the motor 110 and pump 105 to inject chemicals into the pipeline 120 . . . [and] receive[s] data representative of pipeline conditions, such as line pressure, amount of chemicals present in the pipeline 120, and motor operating conditions”), 9:65-10:16, 10:17- 11:4, 11:16-33, 11:55-61 (“each computer 305 may monitor, receive data from, and/or generate commands transmitted to a single chemical injection system 310 or multiple chemical injection systems 310”), 13:9-26. Gutierrez

discloses that the controller connects wirelessly by cellular network connections.

EX1006, 12:30, 30:38-39.

A POSITA would recognize that Gutierrez discloses obtaining data with a facility interface module, with a processor, data from the sensors at the facilities and sending commands to the actuators at the facilities by the network connections as recited in the '014 Patent. EX1002, ¶140. Therefore, Gutierrez discloses this limitation of the '014 Patent.

- f. **[1.6] a computer-implemented web-interface module or modules configured to send instructions to present control interfaces in web browsers executing on user computing devices logged in to the accounts and to receive commands to control actuators from the user computing devices,**

Gutierrez discloses a remote computing system with a graphical user interface (GUI); a sensor coupled with a hydrocarbon transmission system; and a chemical injection system. EX1006, 2:26-29. Gutierrez discloses that the computer used to manage the remote facilities includes a processor. EX1006, 11:38-42 (“reference to the computer 305 includes any processor-based computing device that is operable to manipulate, display, receive, and/or transmit data, such as data associated with a wellsite, hydrocarbon piping system, or other hydrocarbon production facility.”) Gutierrez discloses that the network used to communicate between devices in the system is an enterprise or secured network. EX1006, 12:48-59.

Gutierrez discloses user computing device that interfaces with the fluid handling system to sends instructions to control actuators of the fluid handling

system. EX1006, 11:16-33 (“the system 300 includes a computer 305 displaying a graphical user interface (GUI) 315, one or more remote chemical injection systems 310”), 13:9-26 (“a user or operator may utilize the GUI 315 to control one or more components of the chemical injection system 310 based on data received from the system 310 and displayed on the GUI 315. For example, each chemical injection system 310 may include a number of wireless sensor devices operable to detect one or more operational parameters of the hydrocarbon stream within the pipeline. For instance, the system 310 may detect the relative amount of chemical additives injected into the pipeline . . . the data is communicated to the computer 305 via the communication stations 320, base transceiver 325, and communications network 330, where it is then processed. The computer 305 and/or a user operating the computer 305 may then issue commands to one or more of the chemical injection systems 310 . . . includ[ing] a command to stop injecting chemical additive into the pipeline and/or a command to inject a specified amount of chemical additive into the pipeline.”).

A POSITA would recognize that Gutierrez discloses the control interfaces on a user computer device logged into by an authorized user sending commands to control fluid handling system actuators, as recited in the '014 Patent. EX1002, ¶143. Therefore, Gutierrez discloses this limitation of the '014 Patent.

- g. [1.7] wherein the system is configured to receive, with the web-interface module or modules, a user command to actuate an actuator entered via a presented control**

**interface, identify a network address in the datastore corresponding to a facility at which the actuator is located, and send instructions with the facility-interface module or modules to the facility to actuate the actuator, and**

Gutierrez discloses a graphical user interface that receives the commands and sends them to the fluid handling system. EX1006, 11:16-33 (“the system 300 includes a computer 305 displaying a graphical user interface (GUI) 315, one or more remote chemical injection systems 310”), 13:9-26 (“a user or operator may utilize the GUI 315 to control one or more components of the chemical injection system 310 . . . . The computer 305 and/or a user operating the computer 305 may then issue commands to one or more of the chemical injection systems 310. Such commands may include a command to stop injecting chemical additive into the pipeline and/or a command to inject a specified amount of chemical additive into the pipeline.”).

Gutierrez discloses a graphical user interface that receives the commands, and sends them to the fluid handling system. EX1006, 11:16-33 (“the system 300 includes a computer 305 displaying a graphical user interface (GUI) 315, one or more remote chemical injection systems 310”), 13:9-26.

Gutierrez discloses that the production sites are unique, disclosing separate control systems for “each.” EX1006, 6:28-35; 10:22-24, 10:34-38, 10:43-59 (“data may be wirelessly transmitted directly to each chemical injection system . . . some or all of the processing of data and command generation may occur at the remote control center 220 rather than each individual chemical injection system 220.”),

11:55-61 (“each computer 305 may monitor, receive data from, and/or generate commands transmitted to a single chemical injection system 310 or multiple chemical injection systems 310.”), 11:62-12:3, 13:10-26; Claim 1.

Gutierrez discloses user computing device interfaces with the fluid handling system to send instructions to control the actuators of the fluid handling system. EX1006, 11:16-33 (“the system 300 includes a computer 305 displaying a graphical user interface (GUI) 315, one or more remote chemical injection systems 310”), 13:9-26 (“a user or operator may utilize the GUI 315 to control one or more components of the chemical injection system 310 . . . a user operating the computer 305 may then issue commands to one or more of the chemical injection systems 310. Such commands may include a command to stop injecting chemical additive into the pipeline and/or a command to inject a specified amount of chemical additive into the pipeline.”).

A POSITA would recognize that Gutierrez discloses receiving with the user interface module a user command to actuate an actuator of the fluid handling system, as recited in the '014 Patent. EX1002, ¶¶148-152.

A POSITA would recognize that Gutierrez discloses identifying an address in the datastore corresponding to the facility at which the actuator is located, as recited in the '014 Patent because the user controls “each” component of the chemical injection system with the disclosed GUI. *Id.*

A POSITA would recognize that Gutierrez discloses sending instructions to

the facility interface module to actuate the fluid handling system's actuator, as recited in the '014 Patent. *Id.* Therefore, Gutierrez discloses this limitation of the '014 Patent.

- h. [1.8] wherein: the plurality of accounts include a first account, a second account, a third account, and a fourth account;**

Kahn in view of Gutierrez renders obvious the disclosed plurality of accounts. Gutierrez discloses that its subject conduit systems carry and/or transport one or more fluids to insert other fluids (e.g., additives, inhibitors, or otherwise) into the conduit system, the carried fluids include hydrocarbon systems that transport hydrocarbon fluids, such as oil and/or gas or other fluids. EX1006, 1:18-26.

A POSITA would recognize that the recited plurality of accounts from the disclosure of Gutierrez, because the system described by Gutierrez requires multiple systems and operational components to transport fluids through the described conduit system, geographically distributed across the distance for monitoring and controlling fluids transported through the pipeline. EX1002, ¶¶154-159.

A POSITA would recognize that Gutierrez's disclosure of geographically distributed and multiple types of operational components discloses multiple fluid handling facilities. *Id.*

As described above in Section B.1, and incorporated by reference herein, a POSITA would be motivated to combine the disclosures of Kahn and Gutierrez for elements 1.9-1.12. The disclosures for Kahn in Section 1, above, are fully

incorporated by reference into the discussion of elements 1.9-1.12 herein. Kahn provides specific details of multiple facility and user management to the general fluid handling system disclosures of Gutierrez.

Thus, Gutierrez in combination with Kahn renders obvious the plurality of accounts recited in the '014 Patent. *Id.*

- i. **[1.9] the first account corresponds to a first group of oil or gas facilities, users of the first account being authorized to send commands to remotely control fluid handling devices at the first group of oil or gas facilities;**

Kahn in view of Gutierrez renders obvious the disclosed first account with its users authorized to remotely control a first group of fluid handling devices.

Gutierrez discloses users remotely controlling fluid handling devices, as discussed above for element 1.7 and incorporated herein.

Gutierrez discloses that the network used to communicate in the disclosed methods is an enterprise or secured network. EX1006, 12:48-59.

A POSITA would recognize that enterprise or secured networks require individual users to login, and then users receive access only to designated systems, e.g. access to control a designated group of devices. EX1002, ¶¶161-162.

A POSITA would recognize that the disclosure in Gutierrez matches the relevant disclosure in the '014 Patent. *Id.*

A POSITA would recognize that Kahn and Gutierrez both disclose secure systems where users only have designated access to authorized data or system

controls. *Id.*

As discussed above for limitation 1.8 and incorporated herein, a POSITA would recognize that Kahn in view of Gutierrez renders obvious the disclosed plurality of accounts including accounts in a first group with access permitted for control of a first designated group of devices, as recited in the '014 Patent. *Id.* Therefore, Gutierrez in combination with Kahn renders obvious this limitation of the '014 Patent.

- j. [1.10] the second account corresponds to a second group of oil or gas facilities, the first group being different from the second group, users of the second account being authorized to send commands to remotely control fluid handling devices at the second group of oil or gas facilities;**

Kahn in view of Gutierrez renders obvious the disclosed plurality of accounts with a second group of that plurality of accounts authorized to remotely control designated second fluid handling devices.

A POSITA would recognize that Kahn and Gutierrez both disclose secure systems where users only have designated access to authorized data or system controls. EX1002, ¶¶163-164.

As discussed above for limitation 1.9 and incorporated herein, a POSITA would recognize that Kahn in view of Gutierrez renders obvious a plurality of accounts including accounts in a second group with access permitted for control of a second designated group of devices, as recited in the '014 Patent. *Id.* Therefore, Gutierrez in combination with Kahn renders obvious this limitation of the '014

Patent.

- k. [1.11] the third account corresponds to the first group of oil or gas facilities, users of the third account being authorized to view reports of data from fluid handling devices at the first group of oil or gas facilities; and**

Kahn in view of Gutierrez renders obvious the disclosed plurality of accounts with a third group of that plurality of accounts authorized to remotely view data reports from designated first fluid handling devices.

Gutierrez discloses users remotely viewing data from designated fluid handling devices. For example, Gutierrez discloses monitoring and control equipment including sensors configured to measure fluid handled at respective fluid-handling facilities. EX1006, 9:4-13 (“one or more electronic sensors monitoring the pipeline”); 9:21-25 (“wireless sensors may detect various operations parameters of the pipeline 120, such as line pressure and/or chemical concentrate”), 10:7-16 (“a wireless pressure sensor”), 10:40-46, 13:12-17.

Gutierrez discloses that the network used to communicate in the disclosed methods is an enterprise or secured network. EX1006, 12:48-59.

A POSITA would recognize that enterprise or secured networks require individual users to login, and then users receive access only to designated systems, e.g. access to view data reports for a designated group of devices. EX1002, ¶¶168-170. A POSITA would recognize that the disclosure in Gutierrez matches the relevant disclosure in the '014 Patent. *Id.*

A POSITA would recognize that Kahn and Gutierrez both disclose secure

systems where users only have designated access to authorized data or system controls. *Id.*

As discussed above for limitations 1.8-1.10 and incorporated herein, a POSITA would recognize that Kahn in view of Gutierrez renders obvious the disclosed plurality of accounts including accounts in a third group permitted access to view data reports for a first designated group of devices, as recited in the '014 Patent. *Id.* Therefore, Gutierrez in combination with Kahn renders obvious this limitation of the '014 Patent.

- 1. [1.12] the fourth account corresponds to the second group of oil or gas facilities, users of the fourth account being authorized to view reports of data from fluid handling devices at the second group of oil or gas facilities.**

Kahn in view of Gutierrez renders obvious the disclosed plurality of accounts with a fourth group of that plurality of accounts authorized to remotely view data reports from a designated second fluid handling devices.

As discussed above for limitation 1.11 and incorporated herein, a POSITA would recognize that Kahn in view of Gutierrez renders obvious the disclosed plurality of accounts including accounts in a fourth group, as recited in the '014 Patent. EX1002, ¶¶171-175. Therefore, Gutierrez discloses this limitation of the '014 Patent.

A POSITA would recognize that Kahn and Gutierrez both disclose secure systems where users only have designated access to authorized data or system controls. *Id.*

A POSITA would recognize that Kahn in view of Gutierrez renders obvious the disclosed plurality of accounts including accounts in a fourth group permitted access to view data reports for a second designated group of devices, as recited in the '014 Patent. *Id.* Therefore, Gutierrez in combination with Kahn renders obvious this limitation of the '014 Patent.

Claim 1 would be obvious to a POSITA over Kahn in view of Gutierrez.

### 3. Claim 2

- a. **[2.1] The system of claim 1, wherein the sensors include a tank level sensor of a tank at one of the facilities, and wherein the datastore includes a record associating the tank with the facility, data from the tank being unavailable to users without an account associated with the tank, and wherein the accounts:**

Gutierrez discloses level sensors for chemical reservoirs. EX1006, 12:65-13:8 (“the GUI 315 may display a level of a chemical reservoir at the chemical injection system 310”). Gutierrez discloses sensor readings of fluidic pressure and fluidic storage level. EX1006, 13:27-49 (“One or more of GUIs 400, 410, 420, and 430 may be displayed on the computer 305 in place of or in addition to GUI 315. . . GUI 400 provides information related to . . . fluidic pressure of fluid flowing through the pipeline and/or from chemical reservoir; fluidic storage level of the chemical reservoir”).

Gutierrez discloses separate control systems for “each” system. EX1006, 6:28-35; 10:22-24, 10:34-38, 10:43-59 (“data may be wirelessly transmitted directly to each chemical injection system . . . some or all of the processing of data and

command generation may occur at the remote control center 220 rather than each individual chemical injection system 220.”), 11:55-61 (“each computer 305 may monitor, receive data from, and/or generate commands transmitted to a single chemical injection system 310 or multiple chemical injection systems 310.”), 11:62-12:3, 13:10-26 (“a user or operator may utilize the GUI 315 to control one or more components of the chemical injection system 310”); Claim 1.

Gutierrez discloses that the network used to communicate in the disclosed methods is an enterprise or secured network. EX1006, 12:48-59.

A POSITA would recognize that Gutierrez disclosure of a level sensor of fluid in a reservoir, would sense the level of fluid within a particular tank, as recited in the ’014 Patent. EX1002, ¶¶179-181.

A POSITA would recognize that Gutierrez discloses sensor readings associated with a specific facility sensor, such as on a tank within a given facility, as recited in the ’871 Patent. *Id.*

A POSITA would recognize that enterprise or secured networks require individual users to login, and that users receive access only to designated systems, e.g. data from a specific facility will be unavailable to users without an account associated with that facility. *Id.*

- b. [2.2] designate oil or gas facilities to which a given user is authorized to send the user command to actuate the actuator.**

Gutierrez discloses users remotely controlling fluid handling devices, as

discussed above for element 1.7 and incorporated herein.

Gutierrez discloses separate control systems for “each” system. EX1006, 6:28-35; 10:22-24, 10:34-38, 10:43-59 (“data may be wirelessly transmitted directly to each chemical injection system . . . some or all of the processing of data and command generation may occur at the remote control center 220 rather than each individual chemical injection system 220.”), 11:55-61 (“each computer 305 may monitor, receive data from, and/or generate commands transmitted to a single chemical injection system 310 or multiple chemical injection systems 310.”), 11:62-12:3, 13:10-26 (“a user or operator may utilize the GUI 315 to control one or more components of the chemical injection system 310”); Claim 1.

Gutierrez discloses that the network used to communicate in the disclosed methods is an enterprise or secured network. EX1006, 12:48-59.

A POSITA would recognize that enterprise or secured networks require individual users to login, and then users receive access only to designated systems, e.g. access to control a designated group of devices. EX1002, ¶¶185-187.

A POSITA would recognize that Kahn and Gutierrez both disclose secure systems where users only have designated access to authorized data or system controls. *Id.*

A POSITA would recognize that Kahn in view of Gutierrez renders obvious the designated oil or gas facilities to which a given user is authorized to send the user command to actuate the actuator, as recited in the '014 Patent. *Id.* Therefore,

Gutierrez in combination with Kahn renders obvious this limitation of the '014 Patent.

Claim 2 would be obvious to a POSITA over Kahn in view of Gutierrez.

#### 4. Claim 3

- a. **[3] The system of claim 1, wherein the sensors include a level sensor of an oil/water separation tank at one of the facilities configured to indicate a level at which oil meets water, and wherein the datastore includes a record associating the tank with the facility.**

Gutierrez discloses level sensors for chemical reservoirs. EX1006, 12:65-13:8 (“the GUI 315 may display a level of a chemical reservoir at the chemical injection system 310; power capacity and/or availability of a pump motor at the chemical injection system 310; one or more pump or pump motor characteristics (e.g., amps, current status, pressure, as well as other parameters)”).

Gutierrez discloses sensor readings of fluidic pressure, fluidic storage level, and percentage of water content in the fluidic system. EX1006, 13:27-49 (“One or more of GUIs 400, 410, 420, and 430 may be displayed on the computer 305 in place of or in addition to GUI 315. . . . GUI 400 provides information related to . . . fluidic pressure of fluid flowing through the pipeline and/or from chemical reservoir; fluidic storage level of the chemical reservoir; . . . and a percentage water content of fluid flowing through the pipeline.”).

A POSITA would recognize that Gutierrez disclosure of a level sensor of fluid in a reservoir, as well as information regarding the percentage of water in the fluidic

system, constitutes a fluid level indicator for the oil/water partition level within a particular storage tank within a facility, as recited in the '871 Patent. EX1002, ¶190.

Gutierrez discloses separate control systems for “each” system. EX1006, 6:28-35; 10:22-24, 10:34-38, 10:43-59 (“data may be wirelessly transmitted directly to each chemical injection system . . . some or all of the processing of data and command generation may occur at the remote control center 220 rather than each individual chemical injection system 220.”), 11:55-61 (“each computer 305 may monitor, receive data from, and/or generate commands transmitted to a single chemical injection system 310 or multiple chemical injection systems 310.”), 11:62-12:3, 13:10-26 (“a user or operator may utilize the GUI 315 to control one or more components of the chemical injection system 310”); Claim 1.

A POSITA would recognize that Gutierrez discloses sensor readings associated with a specific facility sensor, such as on a tank within a given facility, as recited in the '871 Patent. EX1002, ¶192.

Claim 3 would be obvious to a POSITA over Kahn in view of Gutierrez.

## 5. Claim 4

- a. **[4] The system of claim 1, wherein the sensors include a leak detector at one of the facilities, and wherein the datastore includes a record associating the leak detector with the facility.**

Gutierrez discloses sensors for chemical reservoirs. EX1006, 12:65-13:8 (“the

GUI 315 may display a level of a chemical reservoir at the chemical injection system 310”), 13:27-49 (“GUI 400 provides information related to . . . fluidic pressure of fluid flowing through the pipeline and/or from chemical reservoir; fluidic storage level of the chemical reservoir”).

Gutierrez discloses that when such sensed pressure falls below a minimum threshold, such as when a pipeline break occurs, the processor 150 may command the motor controller 115 to stop or reduce the speed of the motor 110 and pump 105 so that additional chemicals are not injected into the pipeline 120 and wasted. EX1006, 10:11-16.

A POSITA would recognize that Gutierrez disclosure of pressure sensors used to detect leaks or breaks discloses a leak detector at a given facility with a record associated with the leak detector as Gutierrez discloses follow up actions taken by its described system when a leak is detected, as recited in the '014 Patent. EX1002, ¶¶196-197.

Therefore, a POSITA would understand that Gutierrez discloses every element recited in Claim 4. *Id.* Claim 4 would be obvious to a POSITA over Kahn in view of Gutierrez.

## 6. Claim 5

- a. **[5.1] The system of claim 1, wherein: the web-interface module or modules comprises a web server; and**

Gutierrez discloses a remote computing system with a graphical user interface (GUI); a sensor coupled with a hydrocarbon transmission system; and a chemical

injection system. EX1006, 2:26-29, 11:38-42 (“reference to the computer 305 includes any processor-based computing device that is operable to manipulate, display, receive, and/or transmit data, such as data associated with a wellsite, hydrocarbon piping system, or other hydrocarbon production facility.”). Gutierrez discloses that computer 305 is a server. EX1006, 11:34-37.

A POSITA would recognize that Gutierrez discloses the web-interface module or modules comprise a web server, as recited in the '014 Patent. EX1002, ¶199. Therefore, Gutierrez discloses this limitation of the '014 Patent.

**b. [5.2] the facility-interface module or modules comprises a site server distinct from the web server.**

Kahn discloses a system with Sensor unit 110 that connects via a network to centralized data collection points. *See, e.g.*, EX1006, 5:62-6:2, 9:37-43, 10:18-67, 13:46-52, 17:18-30, 18:40-19:2, 19:5-20:39, 22:12-20, 23:22-50, FIG. 1A, FIG. 3.

Kahn further discloses that the network of sensor units 110 can be configured to communicate with a central communication device, e.g., a server, and/or sensor unit 110 can communicate with each other as a distributed network. EX1006, 10:54-56.

A POSITA would recognize that Kahn discloses the facility-interface module or modules is a site server, as recited in the '014 Patent, because sensor unit 110 can communicate with each other in a distributed network with each sensor unit 110 operating as a server. EX1002, ¶201. Therefore, Kahn discloses this limitation of

the '014 Patent.

Claim 5 would be obvious to a POSITA over Kahn in view of Gutierrez.

## 7. Claim 8

- a. **[8] The system of claim 1, wherein the facility-interface module or modules comprise: means for interfacing with a plurality of site controllers associated with the facilities.**

Gutierrez discloses monitoring and control equipment including sensors configured to measure fluid handled at respective fluid-handling facilities. EX1006, 9:4-13; 9:21-25, 10:7-16, 10:40-46, 13:12-17. Gutierrez discloses monitoring and control equipment including actuators configured to manipulate fluid flow at respective fluid-handling facilities. *See, e.g.*, EX1006, 6:45-8:38 (describing chemical injection system with controllers for activating pumps to manipulate fluid flow), 9:54-10:16, 11:62-12:29, 13:23-26.

Gutierrez discloses that the production sites are uniquely addressable by the network connection through individualized control systems for “each” facility. EX1006, 6:28-35; 10:22-24, 10:34-38, 10:43-59, 11:55-61, 11:62-12:3, 13:10-26; Claim 1.

A POSITA would recognize that Gutierrez discloses means for interfacing with a plurality of site controllers associated with the facilities, as recited in the '014 Patent. EX1002, ¶205.

Claim 8 would be obvious to a POSITA over Kahn in view of Gutierrez.

## 8. Claim 9

- a. **[9] The system of claim 1, wherein the web-interface module or modules comprise: means for sending instructions to present a control interface on the user devices.**

Gutierrez discloses a remote computing system where a user engages a graphical user interface (GUI) to access the capabilities of the system. EX1006, 2:26-29. Gutierrez discloses that the user interacts with the GUI on a user computing device that interfaces with the fluid handling system to sends instructions to control actuators of the fluid handling system. EX1006, 11:16-33, 13:9-26 (“a user or operator may utilize the GUI 315 to control one or more components of the chemical injection system 310”).

A POSITA would recognize that Gutierrez discloses means for sending instructions to present a control interface on the user devices, as recited in the '014 Patent. EX1002, ¶208. Therefore, Gutierrez discloses this limitation of the '014 Patent.

Claim 9 would be obvious to a POSITA over Kahn in view of Gutierrez.

## **9. Claim 10**

- a. **[10] The system of claim 1, wherein the datastore stores accounts for more than one hundred facilities, and the web-interface module or modules are configured interface with more than one hundred user devices.**

As explained above for Kahn, it would have been within the ordinary skill of a POSITA to scale the processes and equipment of claim 1 to accommodate over 100 facilities or over 100 user devices without undue experimentation because Kahn discloses support for a large number of facilities and user devices.

Gutierrez similarly discloses that any number of facilities and/or user devices may be used. EX1006, 10:34-38 (“although a particular number of sites 215, injection systems 210, monitoring module 225, and control center 220 are shown, more or less of each component, as appropriate, may be utilized in keeping with the present disclosure.”); 11:57-61 (“computer 305 may be one of several computers at the remote monitoring station, where each computer 305 may monitor, receive data from, and/or generate commands transmitted to a single chemical injection system 310 or multiple chemical injection systems 310.”)

Kahn in view of Gutierrez, therefore, renders obvious to a POSITA Claim 10. EX1002, ¶210.

## **10. Claim 12**

- a. [12] The system of claim 1, comprising: a controller at one of the facilities communicatively coupled to an actuator or a sensor.**

Gutierrez discloses fluid-handling facilities having sets of both sensors and actuators. EX1006, 6:45-7:2, 9:65-10:16, 10:17-11:4, 11:16-33, 11:55-61, 13:9-26. Gutierrez discloses monitoring and control equipment including actuators configured to manipulate fluid flow at respective fluid-handling facilities. *See, e.g.*, EX1006, 6:45-8:38 (describing chemical injection system with controllers for activating pumps to manipulate fluid flow), 9:54-10:16, 11:62-12:29, 13:23-26.

Gutierrez discloses that the production sites are uniquely addressable by the network connection through individualized control systems for “each” facility.

EX1006, 6:28-35; 10:22-24, 10:34-38, 10:43-59, 11:55-61, 11:62-12:3, 13:10-26; Claim 1.

A POSITA would recognize that Gutierrez discloses a controller at one of the facilities communicatively coupled to an actuator or a sensor as recited in the '014 Patent. EX1002, ¶213. Therefore, Gutierrez discloses this limitation of the '014 Patent.

Claim 12 would be obvious to a POSITA over Kahn in view of Gutierrez.

### **11. Claim 13**

The disclosure of Kahn inherently anticipates, or renders obvious, the elements of Claim 13, as discussed above for Kahn in Claim 13 of Ground 1 and incorporated herein. A POSITA would also recognize that Gutierrez discloses software applications written or described in any appropriate computer language including C, C++, Java, Visual Basic, assembler, Perl, any suitable version of 4GL, as well as others. EX1002, ¶215, and EX1006, 8:54-62, 11:50-54.

A POSITA would recognize that Kahn and Gutierrez inherently disclose, or render obvious, instantiation of threads, and the various thread implementations recited in Claim 13, through computer coding in computer languages such as Java and C++. EX1002, ¶¶216, 220, 223, 226, 229, 232, 235.

Claim 13 would be obvious to a POSITA over Kahn in view of Gutierrez.

### **12. Claim 14**

A POSITA would recognize that Kahn and Gutierrez inherently disclose, or

render obvious, instantiation of threads, and the various thread implementations recited in Claim 14, through computer coding in computer languages such as Java and C++. EX1002, ¶¶237, 239, 241, 243, 245, 247, 249.

Claim 14 would be obvious to a POSITA over Kahn in view of Gutierrez.

### **13. Claim 15**

- a. [15] The system of claim 12, wherein the controller is communicatively coupled to the actuator or sensor via a private local area network.**

Gutierrez discloses coupling the controller with the actuator and sensor via a local private area network, namely a “secured network” over one of several communications protocols including VPN, LAN, RAN, MAN, WAN or the internet. EX1006, 12:26-64.

A POSITA would recognize that Gutierrez discloses communicating with a controller at one of the facilities to control and actuator or read from a sensor via a private local area network. EX1002, ¶250. Claim 15 would be obvious to a POSITA over Kahn in view of Gutierrez.

### **14. Claim 16**

- a. [16] The system of claim 12, wherein controller is communicatively coupled to the actuator or sensor via a frame-based carrier-sense multiple access protocol with collision detection.**

Gutierrez discloses coupling the controller with the actuator and sensor via a various ethernet protocols, including VPN, LAN, RAN, MAN, WAN or the internet. EX1006, 12:26-64.

A POSITA would recognize that Gutierrez discloses a frame-based carrier-sense multiple access protocol with collision detection because a POSITA would know that frame-based carrier-sense multiple access protocol with collision detection, as recited in the '014 Patent, is an Ethernet networking technology. EX1002, ¶252. Claim 16 would be obvious to a POSITA over Kahn in view of Gutierrez.

**15. Claim 18**

- a. **[18] system of claim 12, comprising: means for ensuring at least some data is not lost if network access ceases intermittently.**

Gutierrez discloses that Controller 130 is communicably coupled to the motor controller 115 and provides microprocessor-based control of the motor controller 115 and thus motor 110 and pump 105 . . . a communication module 140, a translation module 145, motor driver, data acquisition, data storage, and a processor 150. EX1006, 8:16-21.

A POSITA would recognize that Gutierrez discloses steps for ensuring at least some data is not lost if network access ceases intermittently, because controller 130 includes data storage. EX1002, ¶254.

Claim 18 would be obvious to a POSITA over Kahn in view of Gutierrez.

**16. Claim 19**

- a. **[19] The system of claim 12, comprising: means for translating a command for an actuator from an input format to a format configured to effectuate changes in the actuator.**

Gutierrez discloses a translation module that converts communication protocol messages into the communication protocol for fluid control actuation devices. EX1006, 2:18-25, 41-47, 4:7-14, 8:19-21, 23-31, 9:34-64 (“translation module 145 receives data communicated in a particular communication protocol to the system 100 via the communication bus 155 and/or wireless antenna 160 and, when necessary, translates such data to a secondary communication protocol understood by the motor controller 115 or other components of the system 100.”).

A POSITA would recognize that Gutierrez discloses steps for translating a command for an actuator from an input format to a format configured to effectuate changes in the actuator. EX1002, ¶257.

Claim 19 would be obvious to a POSITA over Kahn in view of Gutierrez.

#### **17. Claim 20**

- a. [20] The system of claim 19, comprising: means for executing control routines implicated by translated commands on an individual actuator or sensor**

Gutierrez discloses a translation module that converts communication protocol messages into the communication protocol for fluid control actuation devices. EX1006, 2:18-25, 41-47, 4:7-14, 8:19-21, 23-31, 9:34-64.

A POSITA would recognize that Gutierrez discloses steps for translating a command for an actuator from an input format to a format configured to effectuate changes in the actuator. EX1002, ¶259.

Claim 20 would be obvious to a POSITA over Kahn in view of Gutierrez.

**18. Claim 21**

- a. **[21] The system of claim 12, comprising: means for transmitting data to the facility-interface module or modules.**

Gutierrez discloses steps for interfacing with site controllers associated with facilities, as discussed above for Claims 1.5, and 1.6, and incorporated herein.

A POSITA would recognize that Gutierrez discloses communicating with a controller at one of the facilities to control and actuator or read from a sensor, as recited in the '014 Patent. EX1002, ¶¶261-262.

Claim 21 would be obvious to a POSITA over Kahn in view of Gutierrez.

**19. Claim 23**

- a. **[23] The system of claim 12, comprising: an oil or gas facility communicatively coupled to the controller.**

Gutierrez discloses chemical injection system 100 in a hydrocarbon production system, such as, for example, a field or area having one or more hydrocarbon (e.g., oil, natural gas) production sites. EX1006, 6:55-7:2; *see also* EX1006, 5:22-26; 6:24-27; 10:22-38.

Gutierrez discloses chemical injection system 100 that includes a pump 105 mechanically coupled to a driver, such as a motor 110; a motor controller 115; and a controller 130. EX1006, 6:46-49, 8:15-21; *see also* EX1006, 8:39-9:3.

A POSITA would recognize that Gutierrez discloses an oil or gas facility communicatively coupled to the controller, as recited in the '014 Patent. EX1002, ¶264. Therefore, Gutierrez discloses this element of the '014 Patent.

Claim 23 would be obvious to a POSITA over Kahn in view of Gutierrez.

## **C. Discretionary Factors Favor Institution**

### **1. *Advanced Bionics* Factors and 35 U.S.C. §325(d) Favor Institution**

*Advanced Bionics* step one, and *Becton, Dickinson* factors (a), (b), and (d) favor institution because none of the references in this Petition were before the Office during prosecution. *See* EX1002, ¶¶30-35 (summary of prosecution history in EX1004); EX1001, at Cover. The references are also not cumulative of the prosecution prior art, and they explicitly teach “translating the plurality of commands into a plurality of translated commands” which applicants argued was not present in the examined art (EX1004, at 50-51), and they disclose “a sending the translated commands to the local controllers,” which Examiner identified as part of the reasons for allowance. *Id.* at 110-12.

### **2. Discretionary Denial Under *Fintiv* and 35 U.S.C. §314(a) Is Not Appropriate**

The six *Fintiv* factors guide against discretionary denial. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (precedential).

#### **a. No Evidence Regarding A Stay**

Factor 1 is neutral because no motion to stay has been filed.

#### **b. Parallel Proceeding Trial Date**

Factor 2 favors institution. No trial date has been set in co-pending litigation. The expected trial date based on the court’s median time-to-trial date

statistics is approximately September 2027. *See* EX1010 (showing the median time-to-trial date is approximately 33.1 months from the filing of the case (*i.e.*, December 20, 2024)). This date is substantially *after* the expected final written decision date, which is around September 2026.

**c. Investment in Parallel Proceeding**

Factor 3 favors institution. The co-pending litigation is in its early stages, and the investment in it has been minimal. The parties have not exchanged preliminary positions on claim construction, invalidity contentions have not been served, and discovery has not opened. *See PEAG LLC v. Varta Microbattery GmbH*, IPR2020-01214, Paper 8, 17 (Jan. 6, 2021).

**d. Overlapping Issues With Parallel Proceeding**

Factor 4 favors institution. Petitioner stipulates that if the IPR is instituted, Petitioner will not pursue the same grounds for the '909 patent in the district court litigation. *Sand Revolution II LLC v. Continental Intermodal Group–Trucking LLC*, IPR2019-01393, Paper 24 at 7 (June 16, 2020) (informative). As such, the Grounds presented in the instant IPR will be materially different from the grounds that will be presented in the district court.

**e. Identity Of Parties**

Factor 5 is neutral. Petitioner is the defendant in the co-pending litigation.

**f. Other Circumstances, Including The Merits**

Factor 6 guides against discretionary denial. Here, the evidence of unpatentability is compelling, as evidenced by Grounds laid out above.

**3. General Plastic Factors Favor Institution**

The '014 patent was previously challenged in an earlier IPR petition by a different petitioner, but there, the parties settled before Patent Owner filed its preliminary response. Accordingly, none of the *General Plastic* factors apply to this Petition and the *General Plastic* Factors favor institution.

**IX. CONCLUSION**

Trial should be instituted, and the Challenged Claims should be canceled as unpatentable.

Dated: February 28, 2025

Respectfully submitted,

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**U.S. PATENT NO. 9,898,014 – LISTING OF CHALLENGED CLAIMS**

<u>CLAIM NO.</u>	<u>CLAIM ELEMENTS</u>
Claim 1	<p>[1.1] A hosted, web-based, remote industrial monitoring and control system for geographically distributed facilities in oil and gas fields, the system comprising:</p> <p>[1.2] a computer-implemented datastore storing:</p> <p>[1.3] a plurality of accounts, each account corresponding to an entity operating one or more geographically distributed oil or gas facilities, the accounts associating different oil or gas facilities with different entities; and</p> <p>[1.4] network addresses by which industrial monitoring or control equipment at the facilities is accessible via cellular network connections, the monitoring or control equipment including sensors or actuators;</p> <p>[1.5] a computer-implemented facility-interface module or modules configured to obtain data from the sensors at the facilities and send commands to the actuators at the facilities via the cellular network connections; and</p> <p>[1.6] a computer-implemented web-interface module or modules configured to send instructions to present control interfaces in web browsers executing on user computing devices logged in to the accounts and to receive commands to control actuators from the user computing devices,</p> <p>[1.7] wherein the system is configured to receive, with the web-interface module or modules, a user command to actuate an actuator entered via a presented control interface, identify a network address in the datastore corresponding to a facility at which the actuator is located, and send instructions with the facility-interface module or modules to the facility to actuate the actuator, and</p>

<u>CLAIM NO.</u>	<u>CLAIM ELEMENTS</u>
	<p>[1.8] wherein: the plurality of accounts include a first account, a second account, a third account, and a fourth account;</p> <p>[1.9] the first account corresponds to a first group of oil or gas facilities, users of the first account being authorized to send commands to remotely control fluid handling devices at the first group of oil or gas facilities;</p> <p>[1.10] the second account corresponds to a second group of oil or gas facilities, the first group being different from the second group, users of the second account being authorized to send commands to remotely control fluid handling devices at the second group of oil or gas facilities;</p> <p>[1.11] the third account corresponds to the first group of oil or gas facilities, users of the third account being authorized to view reports of data from fluid handling devices at the first group of oil or gas facilities; and</p> <p>[1.12] the fourth account corresponds to the second group of oil or gas facilities, users of the fourth account being authorized to view reports of data from fluid handling devices at the second group of oil or gas facilities.</p>
Claim 2	<p>[2.1] The system of claim 1, wherein the sensors include a tank level sensor of a tank at one of the facilities, and wherein the datastore includes a record associating the tank with the facility, data from the tank being unavailable to users without an account associated with the tank, and wherein the accounts:</p> <p>[2.2] designate oil or gas facilities to which a given user is authorized to send the user command to actuate the actuator.</p>
Claim 3	<p>[3] The system of claim 1, wherein the sensors include a level sensor of an oil/water separation tank at one of the facilities configured to indicate a level at which oil meets water, and wherein the datastore includes a record associating the tank with the facility.</p>

<b><u>CLAIM NO.</u></b>	<b><u>CLAIM ELEMENTS</u></b>
Claim 4	[4] The system of claim 1, wherein the sensors include a leak detector at one of the facilities, and wherein the datastore includes a record associating the leak detector with the facility.
Claim 5	[5.1] The system of claim 1, wherein: the web-interface module or modules comprises a web server; and  [5.2] the facility-interface module or modules comprises a site server distinct from the web server.
Claim 6	[6.1] The system of claim 5, wherein: the web server communicates with user devices via a first network port of a computing device executing the web server; and  [6.2] the site server communicates with facilities via a second network port of the computing device, the second network port being different from the first network port.
Claim 7	[7] The system of claim 1, wherein: the data store stores subscription information associated with at least some of the accounts.
Claim 8	[8] The system of claim 1, wherein the facility-interface module or modules comprise: means for interfacing with a plurality of site controllers associated with the facilities.
Claim 9	[9] The system of claim 1, wherein the web-interface module or modules comprise: means for sending instructions to present a control interface on the user devices.
Claim 10	[10] The system of claim 1, wherein the datastore stores accounts for more than one hundred facilities, and the web-interface module or modules are configured interface with more than one hundred user devices.
Claim 11	[11] The system of claim 1, wherein the facility-interface module or modules are configured to send pull requests to facilities to retrieve data buffered at the facilities.
Claim 12	[12] The system of claim 1, comprising: a controller at one of the facilities communicatively coupled to an actuator or a sensor.
Claim 13	[13.1] The system of claim 12, wherein the system is configured to instantiate at least four of the following as distinct threads from one another:

<b><u>CLAIM NO.</u></b>	<b><u>CLAIM ELEMENTS</u></b>
	<p>[13.2] a thread configured to sends and receive data requests;</p> <p>[13.3] a thread configured to synchronize other threads with updated information;</p> <p>[13.4] a thread configured to set a target state of actuators;</p> <p>[13.5] a thread configured to obtain updated sensor readings;</p> <p>[13.6] a thread configured to process user interactions; and</p> <p>[13.7] a thread that eliminates other threads upon detecting a problem with the eliminated threads.</p>
Claim 14	<p>[14.1] The system of claim 12, wherein the system is configured to instantiate at least two of the following as distinct threads from one another:</p> <p>[14.2] a thread configured to sends or receive data request;</p> <p>[14.3] a thread configured to synchronize other threads with updated information;</p> <p>[14.4] a thread configured to set a target state of actuators;</p> <p>[14.5] a thread configured to obtain updated sensor readings;</p> <p>[14.6] a thread configured to process user interactions; and</p> <p>[14.7] a thread that eliminates other threads upon detecting a problem with the eliminated threads.</p>
Claim 15	<p>[15] The system of claim 12, wherein the controller is communicatively coupled to the actuator or sensor via a private local area network.</p>
Claim 16	<p>[16] The system of claim 12, wherein controller is communicatively coupled to the actuator or sensor via a</p>

<b><u>CLAIM NO.</u></b>	<b><u>CLAIM ELEMENTS</u></b>
	frame-based carrier-sense multiple access protocol with collision detection.
Claim 17	[17] The system of claim 12, wherein controller is configured to periodically push buffered data to the facility-interface module or modules.
Claim 18	[18] system of claim 12, comprising: means for ensuring at least some data is not lost if network access ceases intermittently.
Claim 19	[19] The system of claim 12, comprising: means for translating a command for an actuator from an input format to a format configured to effectuate changes in the actuator.
Claim 20	[20] The system of claim 19, comprising: means for executing control routines implicated by translated commands on an individual actuator or sensor.
Claim 21	[21] The system of claim 12, comprising: means for transmitting data to the facility-interface module or modules.
Claim 22	[22] The system of claim 12, comprising: means for checking validity of a command.
Claim 23	[23] The system of claim 12, comprising: an oil or gas facility communicatively coupled to the controller.

**CERTIFICATION OF COMPLIANCE WITH TYPE-VOLUME LIMITS**

This Petition includes 13,966 words, as counted by Microsoft Word, and is therefore in compliance with the 14,000-word limit established by 37 C.F.R. § 42.24(a)(1)(i). Accordingly, pursuant to 37 C.F.R. § 42.24(d), lead counsel for the Petitioner hereby certifies that this Petition complies with the type-volume limits established for a petition requesting IPR.

Dated: February 28, 2025

Respectfully Submitted,

/ Robert D. Katz /

Robert D. Katz (Reg. No. 60,704)

**CERTIFICATE OF SERVICE**

Pursuant to 37 C.F.R. §§ 42.6(4) and 42.105, lead counsel for Petitioners hereby certifies that on February 28, 2025, copies of this Petition, Power of Attorney, and all supporting exhibits were sent via Federal Express to the correspondence address of record for the '014 Patent:

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A courtesy copy of this Petition and supporting exhibits was also served via email on Patent Owner's counsel of record in the district court litigation.

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