UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TANKLOGIX, LLC,
Petitioner

v.

SITEPRO, INC.,
Patent Owner

Case No. IPR 2025-00649

U.S. Patent No. 9,342,078

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 9,342,078

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EX1004	File Wrapper for U.S. Patent No. 9,342,078
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I. INTRODUCTION

Petitioner requests *Inter Partes* Review ("IPR") of claims 1-8, 11-13, and 15-19 (the "Challenged Claims") of U.S. Patent No. 9,342,078 ("the '078 Patent").

This petition (IPR 2025-00649) is part of a set of **seven** petitions, including IPR 2025-00647, IPR 2025-00648, IPR 2025-00650, IPR 2025-00651, IPR 2025-00652, and IPR 2025-00653, which challenge claims of U.S. Patent Nos. 9,898,014 (the "'014 Patent"); 8,649,909 (the "'909 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 '078 Patent, the "Challenged Patents") respectively. Petitioner requests that the PTAB 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 ("Petitioner").

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

The '078 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 '078 Patent is available for IPR and that the Petitioner is not barred or estopped from requesting *inter partes* review of claims 1-8, 11-13, and 15-19 of the '078 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—liquid chemicals or condensed gases—across a manufacturing plant or factory. EX1001, 1:20-30. To enhance operational performance and improve worker safety, the oil and gas industry long ago adopted technologies for remote monitoring and control of fluid handling systems. *See generally*, EX1005, EX1006.

The typical operation of industrial fluid handling systems places 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.

V. THE ALLEGED INVENTION OF THE '078 PATENT

The '078 Patent, entitled "Remote Control of Fluid-Handling Device," 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 sends commands to an on-site controller, configured to operate whether or not continuously connected to the command center system, to specify the target state of a fluid-handling device. *Id*. The on-site controller system translates the received command into an operative command for a fluid-handling device controller to drive the fluid-handling equipment to the target state and sends the translated command to the fluid-handling device controller. *Id*. The fluid-handling device controller in the claimed system both responds to the translated command and provides feedback to the on-site controller system indicating whether the connected fluid-handling device achieved the target state. *Id*.

A. Summary of Prosecution History (EX1004)

The application that issued as the ‘078 Patent was filed on January 3, 2014. In a first office action, the Examiner rejected claims 1-8, 11-14, 17, and 19-20 under 35 U.S.C. 102(b) as being unpatentable by U.S. Patent Publication No. 2004/0262008 (Deans et al.). Claim 9 was rejected under 35 U.S.C. 103(a) as being unpatentable over Deans et al. in view of U.S. Patent Publication No. 2004/0231851 (Silvers). Claims 10 and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Deans et al. in view of WO 2008/124765 (Roberson et al.). Claims 15-16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Deans et al. in view of U.S. Patent No. 5,149,443 (Varnam). EX1004, at 273-306. In a February 5, 2015 response to the first office action, the Applicant canceled pending claims 1-20 and put forth new claims 21-59. In a March 18, 2015, Final Office Action, the examiner rejected all claims as anticipated or obvious in view of the prior art. EX1004, at 206-221.

On August 18, 2015, the Applicant filed a Request for Continued Examination and Response to Final Office Action. In the RCE, the Applicant amended the claims to include obtaining a target state of at least one of the fluid-handling devices based on at least some of the plurality of instructions, wherein obtaining a target state of at least one of the fluid-handling devices based on at least some of the plurality of instructions comprises after receiving the instructions. EX1004, at 80-106.

In a September 29, 2015, Notice of Allowability, the Examiner allowed claims

21-59 with the addition of the additional translation claim language. EX1004, at 58-64.

VI. OVERVIEW OF THE PRIOR ART

The Challenged Claims are anticipated by or are obvious over the following prior art.

A. Almadi (EX1005)

U.S. Patent No. 8,667,091 to Almadi was filed on July 22, 2011, published on April 5, 2012, and claims priority to Provisional Patent Application No. 61/367,207 filed on July 25, 2010. Almadi issued March 4, 2014. Almadi is prior art under pre-AIA §102(a).

Almadi teaches an integrated node used to interface between a remote host server and a plurality of remote subsystems in a process automation environment to provide, in turn, for a single point of control for data collection, monitoring, and restoration. EX1005, 2:64-31.

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).

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. EX1005. The controller in Gutierrez includes translator capabilities that allow the remote computing device to send commands that can be translated into the protocol required to control the local pump operations. EX1006.

C. SCADA (EX1007)

SCADA: Supervisory Control and Data Acquisition, 4th Edition was published in 2010 and is prior art under pre-AIA §§102(a). SCADA teaches enabling a human operator, in a location central to a widely distributed process-such as a pipeline system, oil or gas field, hydroelectric generating complex, or irrigation network to make set point changes on distant process controllers, to open or close valves or switches, to monitor alarms, and to gather measurement information. EX1007, at 397.

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 or any plausible construction.

VIII. GROUNDS FOR PETITION

A. Ground 1: Almadi Anticipates Claims 1-8, 11-13, 15-17, or would be obvious to a POSITA in view of Almadi.

Independent claim 1 and dependent claims 2-8, 11-13, and 15-17 are anticipated by U.S. Patent No. 8,887,901 ("Almadi") under 35 U.S.C. §102 or would be obvious to a POSITA in view of Almadi under 35 U.S.C. §103.

1. Claim 1

a. [1.1] A method, comprising:

To the extent that the Board finds that the preamble is limiting, Almadi discloses a method.

Almadi discloses that the present invention relates to the control of, and acquisition of data from, remote and in-plant subsystems in automated industrial processes. EX1005, Abstract; 1:18-22, 8:27-67.

A POSITA would recognize that Almadi discloses a method. EX1002, ¶43. Therefore, Almadi discloses the method of the ‘078 Patent.

b. [1.2] receiving, via a network interface, a plurality of user-directed instructions to control fluid-handling devices that monitor or control one or more fluids at an oil well, a petro water disposal or re-injection facility, or a petroleum pumping station, the plurality of instructions being received encoded in a shared protocol;

Almadi discloses that its disclosed method serves intelligent fields for oil and gas, substations/power grid, and remote security. EX1005, 13:20-25. Almadi discloses that integrated node 100 supports a local programming interface over a computer, accessible to a human user through remote host computer 110. EX1005, 12:10-15. EX1005, 12:55-59. More specifically, Almadi discloses integrated node 100 connected to remote host computer 110 or remote subsystems 120 by way of communication links 115 and 125. EX1005, 11:31-35. Input/output unit 104 provides both serial and Ethernet interfaces over communication links 115 and 125. EX1005, 13:51-14:9 (disclosing various communication protocols).

A POSITA would understand that Almadi discloses the recited limitation through its disclosure of receiving commands i.e., instructions from a user through remote host 110, which connects through integrated node 100 to individually addressable remote subsystems 120 for controlling operation of well site components. EX1002, ¶¶44-50.

Thus, Almadi discloses this claim element.

c. **[1.3] obtaining a target state of at least one of the fluid-handling devices based on at least some of the plurality of instructions, wherein obtaining a target state of at least one of the fluid-handling devices based on at least some of the plurality of instructions comprises:**

Almadi discloses that modern field devices monitor and collect data, such as measurements of fluid pressure, temperature, or flow, reflective of the operations of the automated process. EX1005, 1:28-57. Almadi further discloses that modern field devices may be termed "intelligent field devices," generally, in the sense that they may also incorporate more robust functionality, such as the ability to process data, self-monitor, self-regulate, self-calibrate, or provide early warning with respect to malfunctions or predictive maintenance. EX1005, 1:18-57. Almadi discloses that remote subsystems 120 can include a variety of intelligent field systems. *See generally*, EX1005, 12:27-59.

Almadi discloses commands used by the local controller to drive the fluid handling device to a particular target state, e.g. “field devices can perform actuator functions to receive information, such as commands, from the system level to thereby affect or control the operation of an automated process is, for example, through motors and pumps.” EX1005, 1:45-49; *see also id.*, 25:26-37 (“switching a pump off if the flow is below certain limit or activating some bounds or streams based on some readings/conditions”); *id.* 12:27-59.

A POSITA would understand that Almadi’s disclosure of monitoring and collecting data, such as measurements of fluid pressure, temperature, or flow determines a plurality of different target states of a given one of the fluid-handling devices over time is the obtaining a target state of the fluid-handling devices based on a plurality of instructions as claimed in the ‘078 Patent. EX1002, ¶52.

Thus, Almadi discloses this claim element.

d. **[1.4] after receiving the instructions, determining a plurality of different target states of at least one of the fluid-handling devices, the plurality of different states each corresponding to different times;**

Almadi discloses field devices that monitor and collect data, such as measurements of fluid pressure, temperature, or flow, reflective of the operations of the automated process. EX1005, 24:1-3; *see also* EX1005, 1:28-57. Almadi discloses different states corresponding to different times through its disclosures related to the collection, storage, and retrieval of time-stamped process data. EX1005, Abstract, FIG. 6, FIGS. 8-11; 4:30-34, 5:4-6:53, 7:26-34, 7:59-64, 8:6-45, 9:1-33, 15:38-16:50, 17:1-14, 17:29-35, 7:50-65, 19:8-14, 19:26-38, 21:23-27, 23:10-15.

A POSITA would understand that Almadi's disclosure of monitoring and collecting time-stamped process data can be done automatically or manually at different times to determine a plurality of different target states corresponding to different times, as claimed in the '078 Patent. EX1002, ¶54.

Thus, Almadi discloses after receiving the instructions, determining a plurality of different target states of at least one of the fluid-handling devices, the plurality of different states each corresponding to different times.

e. **[1.5] for each of the plurality of instructions, selecting a respective protocol or protocols from among a plurality of protocols different from the shared protocol, wherein the respective fluid-handling device or devices to which the respective instruction is directed are responsive to the selected respective protocol or protocols, wherein at least some of the selected protocols are different from one another;**

Almadi discloses that integrated node 100 can further include a protocol translator or translation server 102 to translate communications with each of the remote subsystems 120 according to various messaging protocols for communication with fluid handling devices. EX1005, 14:10-17, FIG. 1B; *see also*, EX1005, 11:35-41, Claim 4. Almadi discloses protocols different from the shared protocol, above. *Compare, e.g.*, EX1005, 14:10-17, Claim 4, *with* 13:51-14:9 (disclosing computer networking communication protocols).

A POSITA would further understand from Almadi's disclosure of a protocol translator to translate communications with each of the remote sub-systems and its disclosure of various protocols is the selecting of a protocol from a plurality of instructions from a plurality of different protocols claimed in the '078 Patent. EX1002, ¶55.

Thus, Almadi discloses this claim element.

f. **[1.6] after determining the plurality of different target states, translating each received instructions into one or more translated instructions encoded in the selected respective protocol or protocols, the one or more translated instructions including the determined plurality of different target states; and**

Almadi discloses after determining the plurality of different target states, translating each received instructions into one or more translated instructions encoded in the selected respective protocol or protocols through its disclosure that that integrated node 100 can further include a protocol translator or translation server 102 to translate communications with each of the remote subsystems 120 according to any one or more of a plurality of messaging protocols (as can be shown with reference to the arrows connecting protocol translator or translation server 102 and the plurality of remote subsystems 120). EX1005, 14:10-17, FIG. 1B; *see also*, EX1005, 11:35-41.

Almadi discloses the one or more translated instructions including the determined plurality of different target states through its disclosure that the protocol translator or translation server 102 can be configurable, such as being configured by a user, for example through a configuration tool interface, to support communications according to various protocols, including various protocols over serial and Ethernet physical interfaces, such as Serial Modbus, Modbus over IP

(Internet Protocol), Highway Addressable Remote Transducer (HART) Protocol, Foundation Fieldbus, Distributed Network Protocol (DNP), IEC 61850, ISA100.11a, Wireless HART, ZigBee, and Ethernet/IP (Ethernet Industrial Protocol), including supporting subsystems data exchange. EX1005, 14:17-28; *see also* FIG. 2D.

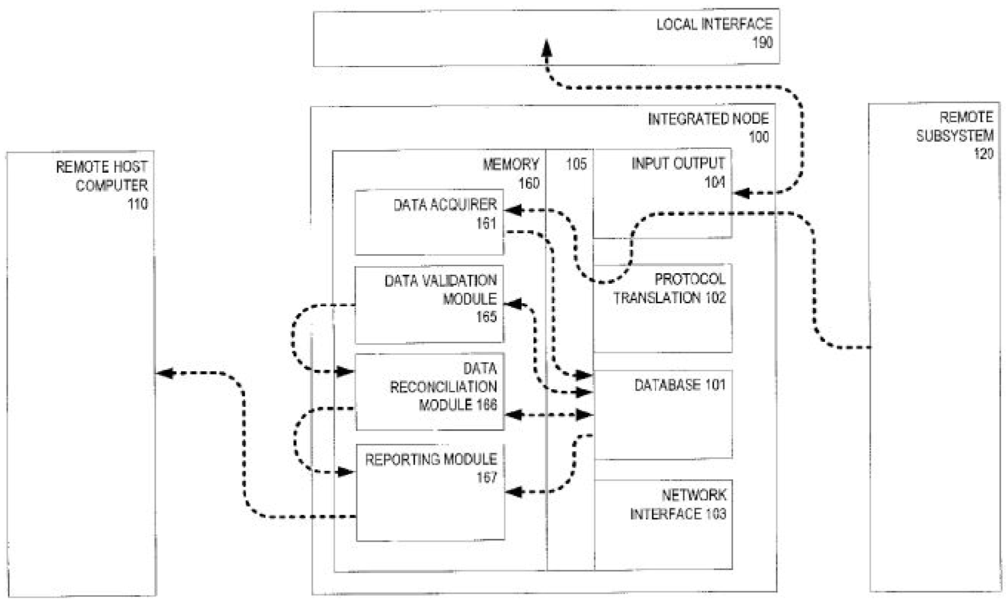

FIG. 2D

Almadi discloses translated commands used by the local controller to drive the fluid handling device to a particular target state, e.g., "field devices can perform actuator functions to receive information, such as commands, from the system level to thereby affect or control the operation of an automated process, for example, through motors and pumps." EX1005, 1:45-49; *see also id.*, 25:26-37 ("switching a pump off if the flow is below certain limit or activating some bounds or streams based on some readings/conditions").

A POSITA would understand that the use of different protocols by the protocol translator requires that the protocols be translated and that the translated instructions include the determined plurality of different target states as claimed in the '078 Patent. EX1002, ¶56. Thus, Almadi discloses this claim limitation.

g. **[1.7] sending each translated instructions to at least the fluid-handling device to which the respective translated instruction is directed, wherein at least some of the translated instructions are effective to cause the at least one of the fluid- handling devices to attempt to achieve the target state**

Almadi discloses that integrated node 100 includes a protocol translator or translation server 102 to translate communications with each of the remote subsystems 120 according to any one or more of a plurality of messaging protocols. EX1005, 14:10-17, FIG. 1B; *see also*, EX1005, 11:35-41. Almadi discloses sending translated commands to the local controller to drive the fluid handling device to a particular target state, e.g. "field devices can perform actuator functions to receive information, such as commands, from the system level to thereby affect or control the operation of an automated process, for example, through motors and pumps." EX1005, 1:45-49; *see also* EX1005, 25:26-37 ("switching a pump off if the flow is below certain limit or activating some bounds or streams based on some readings/conditions"), 9:54-62.

A POSITA would understand that Almadi's disclosures of a protocol translator and a network interface for routing connection between a host and remote subsystems as the sending the translated commands effective to cause the fluid handling device to attempt to achieve the target state, as claimed in the '078 Patent.

EX1002, ¶57.

Thus, Almadi discloses this limitation of the ’078 Patent.

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

2. Claim 2

Almadi discloses the elements of Claim 1 for the reasons discussed above and incorporated herein.

a. [2.1] The method of claim 1, wherein selecting a respective protocol or protocols comprises: parsing, from at least one of the received instructions an identifier of one of the fluid-handling devices; and

Almadi discloses parsing, from at least one of the received instructions and identifier of one of the fluid-handling devices through its disclosure “[m]odeling objects included at the configuration interface include, for example, objects to identify routing and process streams between plants and different numbers and types of process units, such as tanks, crude switches, and other process units.” EX1005, 24:43-48.

A POSITA would understand that modeling objects to identify routing and process streams parses an identifier of one of the fluid-handling devices. EX1002, ¶58. Thus, Almadi discloses this claim element.

b. [2.2] based on the parsed identifier, retrieving from memory one or more records, including an identifier of at least one selected respective protocol and an identifier of a bus to which the identified fluid-handling device is communicatively coupled.

Almadi discloses retrieving from memory one or more records, including an identifier of at least one selected respective protocol through its disclosure that any of the measurements or values can be output by storing to a storage medium such as memory 160 or database 101, by transmitting to remote host computer 110, or by transmitting to any other computer or interface in communication with the integrated node 100 over the input/output unit, such as the local interface 190. EX1005, 27:2-10.

Almadi discloses an identifier of a bus to which the identified fluid-handling device is communicatively coupled through its disclosure of "the configuration interface" that allows a user "to identify routing and process streams between plants and different numbers and types of process units, such as tanks, crude switches, and other process units . . ." EX1005 24:43-48.

A POSITA would recognize from Almadi's disclosure that modeling objects to identify process stream and process limits is the identifying a respective protocol and bus identifier to which a fluid-handling device is coupled of the '078 Patent. EX1002, ¶61. Further, a POSITA would understand that Almadi discloses a record retrieved based on the parsed identifier, retrieving from memory that identifies a respective protocol and a bus to which the identified fluid-handling device is communicatively coupled, as recited in the '078 Patent, through Almadi's disclosure of a storage medium, that identifies each of the routing and process streams. 120. EX1002, ¶62. Thus, Almadi discloses this claim element.

Thus, Claim 2 is anticipated by Almadi or would be obvious to a POSITA in view of Almadi.

3. Claim 3

Almadi discloses the elements of Claims 1 and 2 for the reasons discussed above and incorporated herein.

a. **The method of claim 2, wherein sending each translated instructions to at least the fluid-handling device to which the respective instruction is directed comprises: sending an address of the identified fluid-handling device on the identified bus in association with at least some of the translated instructions.**

Almadi discloses sending each translated instructions to the fluid-handling device through its disclosure that integrated node 100 includes a protocol translator or translation server 102 to translate communications with remote subsystems 120 according to designated messaging protocols. EX1005, 14:10-17, FIG. 1B; *see also*, EX1005, 11:35-41.

Almadi discloses sending an address for a fluid-handling device on a bus with the translated instructions through its disclosure that its disclosure "[m]odeling objects included at the configuration interface include, for example, objects to identify routing and process streams between plants and different numbers and types of process units, such as tanks, crude switches, and other process units." EX1005, 24:43-48; *see also* EX1005, 11:35-41, 14:10-17, FIG. 1B.

Almadi also discloses that network communication links 125 may include, a logical bus. EX1005, 13:25-30.

A POSITA would understand that Almadi's disclosure of network communication links and modeling objects that include routing and process streams is the sending an address of a fluid-handling device or a bus with at least some of the translated instructions on the identified bus. EX1002, ¶63.

Thus, Claim 3 is anticipated by Almadi or would be obvious to a POSITA in view of Almadi.

4. Claim 4

Almadi discloses the elements of Claims 1 and 2 for the reasons discussed above and incorporated herein.

a. **[4.1] The method of claim 2, wherein sending each translated instructions to at least the fluid-handling device to which the respective instruction is directed comprises: providing at least some of the translated instructions to a link-layer device connected to the identified bus; and**

Almadi discloses sending each translated instruction to the fluid-handling device through its disclosure that integrated node 100 includes a protocol translator or translation server 102 to translate communications with remote subsystems 120 according to designated messaging protocols. EX1005, 14:10-17, FIG. 1B; *see also id.*, 11:35-41.

A POSITA would understand that link-layer devices communicate over a physical link. EX1002, ¶68. Almadi discloses providing at least some of the translated instructions to a link-layer device connected to the identified bus through its disclosure of protocols over serial and Ethernet physical interfaces and busses.

EX1005, 14:19-22.

Almadi also discloses a network switch including a network bridge for processing and routing functions at the data link layer (Layer 2) of the Open System Interconnection ("OSI) Reference Model or any known Layer 3 switch or router or any known multi-layer Switch for processing and routing data at the data link or network layers. EX1005, 12:64-13:3.

A POSITA would understand that the multi-layer switch of Almadi is a link layer device, as recited in the '078 Patent. EX1002, ¶68. Thus, Almadi discloses this claim element.

b. **[4.2] encoding the translated instructions with the link-layer device in accordance with the physical medium by which the identified bus is implemented.**

Almadi discloses encoding the translated instructions with the link-layer device in accordance with the physical medium by which the identified bus is implemented through its disclosure that the translated instructions to a link-layer device connect it to the identified bus through serial and Ethernet physical interfaces and busses. EX1005, 14:19-22.

Almadi also discloses a network switch including a network bridge for processing and routing functions at the data link layer. EX1005, 12:64-66.

A POSITA would understand from Almadi's disclosure that the network switch encodes translated instructions and that because it is a link layer device, it operates in both the physical and data link layers. EX1002, ¶69.

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

5. Claim 5

Almadi discloses the elements of Claims 1 and 2 for the reasons discussed above and incorporated herein.

a. **[5.1] The method of claim 2, wherein sending each translated instruction to at least the fluid-handling device to which the respective instruction is directed comprises: providing at least some of the translated instructions to a digital-to-analog converter connected to the identified bus; and**

Almadi discloses providing at least some of the translated instructions to a digital-to-analog converter connected to the identified bus. Almadi discloses analog inputs, analog outputs, digital inputs, digital outputs, and pulse inputs. EX1005, 13:64-66. Almadi also discloses that the protocol translator is adapted to support multiple analog and digital communication protocols: serial Modbus, Modbus over Internet protocol (IP), highway addressable remote transducer protocol (HART), distributed network protocol (DNP), IEC61850 (International Electrotechnical Commission Standard), the International Society of Automation (ISA) SP100 protocol, and Ethernet/IP (Industrial Protocol). EX1005, 14:22-27. Almadi also discloses that the integrated node supports a plurality of connection types, protocol types, and communication speed rates. EX1005, 14:28-32.

A POSITA would understand that Almadi's disclosure of analog and digital inputs and outputs, a network interface, and a protocol translator is the providing translated instructions to a digital-to-analog convertor as claimed in the '078 Patent. EX1002, ¶71. Thus, Almadi discloses this claim element.

b. **[5.2] sending the at least some of the translated instructions to the identified fluid-handling device with the digital-to- analog converter.**

Almadi discloses sending translated instructions to the identified fluid-handling device with a digital-to-analog converter through its disclosure of analog inputs, analog outputs, digital inputs, digital outputs, and pulse inputs. EX1005, 13:64-66, Claim 4. Almadi also discloses that the protocol translator is adapted to support multiple analog and digital communication protocols: serial Modbus, Modbus over Internet protocol (IP), highway addressable remote transducer protocol (HART), distributed network protocol (DNP), IEC61850 (International Electrotechnical Commission Standard), the International Society of Automation (ISA) SP100 protocol, and Ethernet/IP (Industrial Protocol). EX1005, 14:22-27).

Almadi also discloses that the integrated node supports a plurality of connection types, protocol types, and communication speed rates. EX1005, 14:28-32.

A POSITA would understand from Almadi's disclosure of digital and analog outputs, communication protocols and a network interface is the sending translated instructions with a digital-to-analog converter as claimed in the '078 Patent. EX1002, ¶72. Thus, Almadi discloses this claim element.

Claim 5 is anticipated by Almadi or would be obvious to a POSITA in view of Almadi.

6. Claim 6

Almadi discloses the elements of Claim 1 for the reasons discussed above and incorporated herein.

a. The method of claim 1, wherein: the at least some of the translated instructions are effective to cause the at least one of the fluid-handling devices to attempt to achieve the plurality of different target states at the different times.

Almadi discloses that modern field devices monitor and collect data, such as measurements of fluid pressure, temperature, or flow, reflective of the operations of the automated process. EX1005, 1:28-57. Almadi further discloses that modern field devices may be termed "intelligent field devices," generally, in the sense that they may also incorporate more robust functionality, such as the ability to process data, self-monitor, self-regulate, self-calibrate, or provide early warning with respect to malfunctions or predictive maintenance. EX1005, 1:18-57. Almadi discloses that remote subsystems 120 can include a variety of intelligent field systems. *See generally*, EX1005, 12:27-59.

Almadi discloses that integrated node 100 can further include a protocol translator or translation server 102 to translate communications with each of the remote subsystems 120 according to various messaging protocols for communication with fluid handling devices. EX1005, 14:10-17, FIG. 1B; *see also*, EX1005, 11:35-41, Claim 4.

Almadi discloses commands used by the local controller to drive the fluid handling device to a particular target state, e.g. "field devices can perform actuator functions to receive information, such as commands, from the system level to thereby affect or control the operation of an automated process, for example, through motors and pumps." EX1005, 1:45-49; *see also* EX1005, 25:26-37 ("switching a pump off if the flow is below certain limit or activating some bounds or streams based on some readings/conditions"); *see also* 12:27-59.

A POSITA would understand that Almadi's disclosure of monitoring and collecting data, such as measurements of fluid pressure, temperature, or flow determines a plurality of different target states of a given one of the fluid-handling devices over time is the obtaining a target state of the fluid-handling devices based on a plurality of instructions, as claimed in the '078 Patent. EX1002, ¶73.

A POSITA would understand that Almadi's disclosure explains that the system will attempt to drive the fluid-handling device into a plurality of different target states at different times based on limits, readings, or conditions measured by the system, i.e. at different times, as claimed in the '078 Patent. EX1002, ¶73.

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

7. Claim 7

Almadi discloses the elements of Claims 1 and 6 for the reasons discussed above and incorporated herein.

a. **The method of claim 6, comprising: losing a network connection by which at least some of the plurality of user- directed instructions are received; and after losing the network connection, continuing to cause the at least one of the fluid-handling devices to attempt to achieve the plurality of different target state at the different times and continuing to execute instructions among the plurality of received instructions received prior to losing the network connection before entering an automatic mode.**

Almadi discloses that modern field devices monitor and collect data, such as measurements of fluid pressure, temperature, or flow, reflective of the operations of the automated process. EX1005, 1:28-57. Almadi further discloses that modern field devices may be termed “intelligent field devices,” generally, in the sense that they may also incorporate more robust functionality, such as the ability to process data, self-monitor, self-regulate, self-calibrate, or provide early warning with respect to malfunctions or predictive maintenance. EX1005, 1:18-57. Almadi discloses that remote subsystems 120 can include a variety of intelligent field systems. *See generally*, EX1005, 12:27-59.

A POSITA would understand that Almadi’s disclosure of monitoring and collecting data, such as measurements of fluid pressure, temperature, or flow determines a plurality of different target states of a given one of the fluid-handling devices over time as claimed in the ‘078 Patent. EX1002, ¶52.

A POSITA would further understand from Almadi’s disclosure that “intelligent field devices” process data, self-monitor, self-regulate, self-calibrate, etc., means that intelligent field devices maintain control of the fluid handling devices without requiring network connectivity to a command center server as claimed in the ‘078 Patent. EX1002, ¶74.

A POSITA would understand from the above that Almadi’s disclosure of detecting a communication failure and instructing the integrated mode to retrieve a data file or a plurality of data files is the continuing to execute instructions received prior to the loss of network connection claimed in the ‘078 Patent. EX1002, ¶74.

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

8. Claim 8

Almadi discloses the elements of Claims 1 and 6 for the reasons discussed above and incorporated herein.

a. **The method of claim 6, wherein the plurality of different states ramp up or ramp down a motor speed of a motor of the at least one of the fluid-handling devices.**

Almadi discloses that remote subsystems 120 can include a variety of intelligent field systems. *See generally*, EX1005, 12:27-59. More specifically, Almadi discloses commands used by the local controller to drive the fluid handling device to a particular target state, e.g. “field devices can perform actuator functions to receive information, such as commands, from the system level to thereby affect or control the operation of an automated process, for example, through motors and pumps.” EX1005, 1:45-49; *see also id.*, 25:26-37 (“switching a pump off if the flow is below certain limit or activating some bounds or streams based on some readings/conditions”); *see also id.*, 12:27-59.

A POSITA could understand that Almadi’s disclosure of the use of control data by intelligent equipment devices includes the ramping up or down the speed of a motor where the signal to ramp up or ramp down is the control data and the motor is an intelligent equipment device. EX1002, ¶75.

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

9. Claim 11

Almadi discloses the elements of Claim 1 for the reasons discussed above and incorporated herein.

a. **The method of claim 1, wherein at least some of the received instructions identify an automatic mode in which a collection of target states are computed to operate within process constraints.**

Almadi discloses that modern field devices monitor and collect data, such as measurements of fluid pressure, temperature, or flow, reflective of the operations of the automated process. EX1005, 1:28-57. Almadi further discloses that modern field devices may be termed “intelligent field devices,” generally, in the sense that they may also incorporate more robust functionality, such as the ability to process data, self-monitor, self-regulate, self-calibrate, or provide early warning with respect to malfunctions or predictive maintenance. EX1005, 1:18-57.

Almadi discloses that remote subsystems 120 can include a variety of intelligent field systems. *See generally*, EX1005, 12:27-59. More specifically, Almadi discloses commands used by the local controller to drive the fluid handling device to a particular target state, e.g. "field devices can perform actuator functions to receive information, such as commands, from the system level to thereby affect or control the operation of an automated process, for example, through motors and pumps." EX1005, 1:45-49; *see also id.*, 25:26-37 ("switching a pump off if the flow is below certain limit or activating some bounds or streams based on some readings/conditions"); *id.*, 12:27-59.

A POSITA would understand from Almadi's disclosure that received instructions identify an automatic mode in which a collection of target states are computed to operate within process constraints, as claimed in the '078 Patent. EX1002, ¶77.

Claim 11 is anticipated by Almadi or would be obvious to a POSITA in view of Almadi.

10. Claim 12

Almadi discloses the elements of Claim 1 for the reasons discussed above and incorporated herein.

a. The method of claim 1, wherein at least some of the received instructions correspond to a manual mode in which an individual one of the fluid-handling devices is remotely controlled by a user.

Almadi discloses that integrated node 100 supports a local programming interface over a computer, such as through a computer terminal having one or more input devices and one or more display devices that are accessible to a human user (not pictured) or, for example, by using the remote host computer 110. EX1005, 12:10-19. Almadi also discloses that integrated node 100 supports proportional-integral-derivative control (PID), closed-loop control, open-loop control, and logic and sequence functions. *Id*.

A POSITA would understand that closed-loop control requires direct control by a user turning on or off designated functions. EX1002, ¶79.

A POSITA would understand from Almadi that receiving instructions corresponds to a manual mode in which an individual one of the fluid-handling devices is remotely controlled by a user. EX1002, ¶79.

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

11. Claim 13

Almadi discloses the elements of Claim 1 for the reasons discussed above and incorporated herein.

a. **[13.1] The method of claim 1, comprising: before sending at least one of the translated instructions, accessing a constraint value stored in memory;**

Almadi discloses claim element 13.1. Almadi discloses that before sending at least one of the translated instructions, accessing a constraint value stored in memory through its disclosure that upon receiving the time-stamped process data from a remote subsystem, the system determines whether the time-stamped process data constitutes an exception responsive to preselected exception criteria. EX1005, 5:17-39; 17:1-18, 17:29-37, 23:5-40, FIG. 8-9.

A POSITA would understand Almadi's disclosure of the determining of the pre-defined exception criteria is the accessing of a constraint value before sending the translated instructions as claimed in the '078 Patent. EX1002, ¶80. Thus, Almadi discloses this claim element.

b. **[13.2] determining that the at least one of the translated instructions will not violate the constraint value; and**

Almadi discloses determining the translated instructions will not violate the constraint value through its disclosure upon receiving the time-stamped process data from a remote subsystem, the system determines whether the time-stamped process data constitutes an exception responsive to preselected exception criteria. EX1005:17-39; 17:1-18, 17:29-37, 23:5-40, FIG. 8-9.

A POSITA would understand that Almadi's disclosure of determining whether the time-stamped process data constitutes an exception responsive to the preselected exception criteria is determining whether at least one of the translated instructions will violate a constraint value claimed in the '078 Patent. EX1002, ¶81. Thus, Almadi discloses this claim element.

c. **[13.3] in response to the determination, sending the at least one of the translated instructions.**

Almadi discloses sending the translated instructions through its disclosure that the system provides instructions to, upon receiving the time-stamped process data from a remote subsystem, determine whether the time-stamped process data constitutes an exception responsive to preselected exception criteria. EX1005:17-39; 17:1-18, 17:29-37, 23:5-40, FIG. 8-9. Depending on the criteria check result, the system takes further action to report the exception and remove or replace an out-of-bounds measurement. *Id*.

A POSITA would understand that Almadi's disclosure of providing instructions to process data from a remote subsystem is the sending the translated commands claimed in the '078 Patent. EX1002, ¶82. Thus, Almadi discloses this claim element, and as such anticipates Claim 13.

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

12. Claim 15

Almadi discloses the elements of Claim 1 for the reasons discussed above and incorporated herein.

a. **[15] The method of claim 1, wherein a given one of the fluid-handling devices comprises a proportional-integral- derivative controller, and wherein at least some of the translated instructions adjust a set point of the proportional- integral-derivative controller.**

Almadi discloses the fluid-handling devices comprising a proportional-integral-derivative controller, and wherein at least some of the translated instructions adjust a set point of the proportional-integral-derivative controller through its disclosure of the integrated node 100 can further support proportional-integral-derivative control (PID) . . ." EX1005, 12:15-17.

A POSITA would understand that proportional-integral-derivative control (PID) is the proportional-integrated-derivative controller and that the processing of measurement data is the adjusting of a set point of the controller. EX1002, ¶85.

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

13. Claim 16

Almadi discloses the elements of Claim 1 for the reasons discussed above and incorporated herein.

a. [16.1] The method of claim 1, comprising: receiving, at a remote server system, via a network, user credentials from a user device;

Almadi discloses a system intended to serve in various networking operating environments, including, for example, intelligent fields for oil and gas, substations/power grid, and remote security, and can be utilized and can be extended for enterprise applications. EX1005, 12:10-15, 12:48-59, 13:20-25. Almadi further discloses "[t]hose having skill in the art will appreciate various techniques to ensure no file access violations during the process of accessing the file, for example, by the remote host 300." EX1005, 16:65-67.

A POSITA would understand that Almadi requires users of such systems would be required to input a username and password for accessing the remote host computer. EX1002, ¶86.

Thus, Almadi discloses this claim element.

b. **[16.2] identifying, with the remote server system, an account based on the user credentials, the account including identifiers of the oil well, the petro water disposal or re- injection facility, or the petroleum pumping station and at least one other facility;**

Almadi discloses that its disclosed method serves intelligent fields for oil and gas, substations/power grid, and remote security. EX1005, 12:48-59, 13:20-25. Almadi discloses an identifier of a bus to which the identified fluid-handling device is communicatively coupled through its disclosure of "the configuration interface" that allows a user "to identify routing and process streams between plants and different numbers and types of process units, such as tanks, crude switches, and other process units . . ." EX1005 24:43-48.

A POSITA would further recognize from the above disclosure that Almadi discloses identifying an account associated with an oil well, the petro water disposal or re-injection facility, or the petroleum pumping station and at least one other facility through its disclosure of a secured network and chemical injection system. EX1002, ¶88. Therefore, Almadi discloses this limitation.

c. **[16.3] receiving from the user device, at the remote server system, a request corresponding to at least one of the received instructions, the request including an identifier of the oil well, the petro water disposal or reinjection facility, or the petroleum pumping station;**

Almadi discloses that its disclosed method serves intelligent fields for oil and gas, substations/power grid, and remote security. EX1005, 13:20-25.

Almadi discloses that integrated node 100 supports a local programming interface over a computer, accessible to a human user through remote host computer 110. EX1005, 12:10-15. EX1005, 12:55-59. More specifically, Almadi discloses integrated node 100 connected to remote host computer 110 or remote subsystems 120 by way of communication links 115 and 125. EX1005, 11:31-35. Input/output unit 104 provides both serial and Ethernet interfaces over communication links 115 and 125. EX1005, 13:51-14:9 (disclosing various communication protocols). Almadi discloses an identifier of a bus to which the identified fluid-handling device is communicatively coupled through its disclosure of "the configuration interface" that allows a user "to identify routing and process streams between plants and different numbers and types of process units, such as tanks, crude switches, and other process units . . ." EX1005 24:43-48.

A POSITA would recognize that Almadi discloses receiving a request corresponding to at least one received instruction as recited in the '078 Patent. EX1002, ¶90. Therefore, Almadi discloses this limitation.

d. **[16.4] identifying, with the remote server system, an Internet Protocol address at which the network interface is reachable based on the identifier of the oil well, the petro water disposal or re-injection facility, or the petroleum pumping station; and**

Almadi discloses an identifier of a bus to which the identified fluid-handling device is communicatively coupled through its disclosure of "the configuration interface" that allows a user "to identify routing and process streams between plants and different numbers and types of process units, such as tanks, crude switches, and other process units . . .” EX1005 24:43-48.

A POSITA would recognize that Almadi discloses identifying an Internet Protocol address at which the network interface is reachable as recited in the ‘078 Patent. EX1002, ¶92. Therefore, Almadi discloses this limitation.

e. **[16.5] sending, from the remote server system, the at least one of the received instructions to the identified Internet Protocol address in response to the request.**

Almadi discloses sending, with the server, the instructions via the internet protocol network address through its disclosure that the integrated node employs an Ethernet switch to support networking over multiple communication interfaces and transmit process data to a remote host server over TCP/IP (transmission control protocol and the internet protocol. EX1005, 3:13-17; *see also*, FIGs 8-11.

More specifically, Almadi discloses that integrated node 100 supports a local programming interface over a computer, accessible to a human user through remote host computer 110. EX1005, 12:10-15. EX1005, 12:55-59. More specifically, Almadi discloses integrated node 100 connected to remote host computer 110 or remote subsystems 120 by way of communication links 115 and 125. EX1005, 11:31-35. Input/output unit 104 provides both serial and Ethernet interfaces over communication links 115 and 125. EX1005, 13:51-14:9 (disclosing various communication protocols).

A POSITA would recognize from the above disclosure that Almadi discloses sending the received instructions to the Internet protocol address of the facility.

Therefore, Almadi discloses this limitation. EX1002, ¶95.

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

14. Claim 17

Almadi discloses the elements of Claim 1 for the reasons discussed above and incorporated herein.

a. [17] The method of claim 16, wherein the user device is a smartphone executing a smartphone application that communicates with the remote server system via an application program interface.

Almadi discloses Claim 17. Almadi discloses the user device is a smartphone executing a smartphone application that communicates with the remote server system via an application program interface through its disclosure that the "integrated node 100 also supports a local programming interface over a computer, such as through computer terminal having one or more input devices and one or more display devices that are accessible to a human user (not pictured) or, for example, by using the remote host computer 110." EX1005, 12:10-14. Almadi further discloses that "[a]s will be understood in the art, the configuration interface 190 may be implemented on a user-terminal computer and be configurable or operable by any number of peripheral devices for interacting with a user, such as a monitor, a keyboard, a mouse, a stylus, a printer, a touchscreen, a joystick, or any other known peripheral device in communication with the user-terminal computer."

EX1005, 24:37-43.

A POSITA would understand that modern smartphones have the same capabilities for engaging with a user as described in Almadi for the user-terminal computer. EX1002, ¶97.

A POSITA would understand that a user terminal computer could be a smartphone capable of executing a smartphone application. EX1002, ¶97. Thus, Almadi discloses claim 17.

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

B. Ground 2: Gutierrez Anticipates Claims 1-2, 6, and 16-19 or would be obvious to a POSITA in view of Gutierrez.

Independent Claim 1 and dependent Claims 2, 6, and 16-19 anticipated by the disclosure, either express or inherent, in U.S. Patent No. 9,709,995 ("Gutierrez") under 35 U.S.C. §102, or would be obvious to a POSITA in view of Abdallah under 35 U.S.C. §103.

1. Claim 1

a. [1.1] A method, comprising:

To the extent that the Board finds that the preamble is limiting, Gutierrez discloses a method. EX1006, 1:54-2:8, 5:32-36, Claims 1-8. A POSITA would recognize that Gutierrez discloses a method. EX1002, ¶99.

b. [1.2] receiving, via a network interface, a plurality of user-directed instructions to control fluid-handling devices that

monitor or control one or more fluids at an oil well, a petro water disposal or re-injection facility, or a petroleum pumping station, the plurality of instructions being received encoded in a shared protocol;

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 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. 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. 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.

Gutierrez discloses receiving, via a network interface, a plurality of user-directed instructions to control fluid-handling devices through its disclosure 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 ("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 chemical injection system 220.”).

A POSITA would recognize from the above disclosures that Gutierrez discloses receiving a plurality of user-directed instructions to control fluid-handling devices as recited in the ‘078 Patent. EX1002, ¶100. Therefore, Gutierrez discloses this limitation.

c. **[1.3] obtaining a target state of at least one of the fluid- handling devices based on at least some of the plurality of instructions, wherein obtaining a target state of at least one of the fluid-handling devices based on at least some of the plurality of instructions comprises:**

Gutierrez discloses a server receiving values for operational parameters of the transmission system based on a command received from a user, as well as transmitting commands based on one or more operational parameters to adjust control parameters in the system, such as the speed of a motor. EX1006, 3:40-45, 5:58-67, 6:1-10, 6:13-23, 6:24-44, 9:21-25, 9:55-64, 10:27-30, 10:39-43, 11:18-26, 13:9-26.

Gutierrez discloses the command is received in association with a record stored on a datastore through its disclosure that the memory may also include any other appropriate data such as data classes or object interfaces, and software sub-applications or sub-systems. EX1006, 8:50-52. Gutierrez discloses receiving, with a server, a command comprising a target value of a fluid-handling device from a computing device via a control interface through its disclosure that a graphical user interface 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 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 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 from the above disclosures that Gutierrez discloses obtaining a target state of at least some of the plurality of instructions the addresses for facilities as recited in the ‘078 Patent. EX1002, ¶101. Therefore, Gutierrez discloses this limitation.

d. **[1.4] after receiving the instructions, determining a plurality of different target states of the at least one of the fluid- handling devices, the plurality of different states each corresponding to different times;**

Gutierrez discloses sending, with the server, the target value to the network address via the network through its disclosure that the 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 based on data received from the system 310 and displayed on the GUI 315. ("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 transmitting commands based on one or more operational parameters, over time as the operational parameters develop, to adjust control parameters in the system, such as the speed of a motor. EX1006, 3:40-45, 5:58-67, 6:1-10, 6:13-23, 6:24-44, 9:21-25, 9:55-64, 10:27-30, 10:39-43, 11:18-26, 13:9-26.

A POSITA would recognize from the above disclosures that Gutierrez discloses determining a plurality of target states of at least one fluid-handling device where the different target states correspond to different times as recited in the '078 Patent. EX1002, ¶102. Therefore, Gutierrez discloses this limitation.

e. **[1.5] for each of the plurality of instructions, selecting a respective protocol or protocols from among a plurality of protocols different from the shared protocol, wherein the respective fluid-handling device or devices to which the respective instruction is directed are responsive to the selected respective protocol or protocols, wherein at least some of the selected protocols are different from one another;**

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.").

Gutierrez discloses many different protocols that fluid handling devices would be responsive to, such as RS-232, RS-485 (Modbus or EIA-485), RS-422 (or EIA-422), TCP/IP, Fieldbus, DeviceNet, and Profibus. EX1006, 9:41-46.

A POSITA would recognize from the above disclosures that Gutierrez discloses selecting a protocol or protocols from the plurality of protocols as recited in the '078 Patent. EX1002, ¶103. Therefore, Gutierrez discloses this limitation.

f. **[1.6] after determining the plurality of different target states, translating each received instructions into one or more translated instructions encoded in the selected respective protocol or protocols, the one or more translated instructions including the determined plurality of different target states; and**

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 from the above disclosures that Gutierrez discloses translating the receiver instructions into translated instructions encoded in a respective protocol or protocols as recited in the ‘078 Patent. EX1002, ¶104. Therefore, Gutierrez discloses this limitation.

g. **[1.7] sending each translated instructions to at least the fluid-handling device to which the respective translated instruction is directed, wherein at least some of the translated instructions are effective to cause the at least one of the fluid- handling devices to attempt to achieve the target state**

Gutierrez discloses a translation module that converts communication protocol messages into the communication protocol and sends the translated messages to the respective 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.”).

Gutierrez discloses a server receiving values for operational parameters of the transmission system based on a command received from a user, as well as transmitting commands based on one or more operational parameters to adjust control parameters in the system, such as the speed of a motor, in an attempt to achieve the target state. EX1006, 3:40-45, 5:58-67, 6:1-10, 6:13-23, 6:24-44, 9:21-25, 9:55-64, 10:27-30, 10:39-43, 11:18-26, 13:9-26.

A POSITA would recognize that Gutierrez discloses the control interfaces on a user computer device is the sending commands to control fluid handling system actuators in an attempt to achieve the target state, as recited in the '078 Patent. EX1002, ¶105. Therefore, Gutierrez discloses this limitation.

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

2. Claim 2

Almadi discloses the elements of Claim 1 for the reasons discussed above and incorporated herein.

a. [2.1] The method of claim 1, wherein selecting a respective protocol or protocols comprises: parsing, from at least one of the received instructions, an identifier of one of the fluid- handling devices; and

Gutierrez discloses parsing, from at least one of the received instructions, an identifier of one of the fluid-handling devices through its disclosure that the production sites are uniquely addressable by the network connection through individualized control systems for "each" fluid-handling device. 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."),

A POSITA would recognize that Gutierrez discloses parsing an identifier of fluid-handling devices from the received instructions as recited in the '078 Patent. EX1002, ¶107. Therefore, Gutierrez discloses this limitation.

b. **[2.2] based on the parsed identifier, retrieving from memory one or more records, including an identifier of at least one selected respective protocol and an identifier of a bus to which the identified fluid-handling device is communicatively coupled.**

Gutierrez discloses retrieving from memory one or more records, including an identifier of at least one selected respective protocol through its disclosure of a memory (EX1006, 11:42-53) and a protocol identification through its disclosure that data may be sent to the controller 130 in many different protocols, such as RS-232, RS-485 (Modbus or EIA-485), RS-422 (or EIA-422), TCP/IP, Fieldbus, DeviceNet, and Profibus. EX1006, 9:41-44; Claim 1.

Gutierrez discloses an identifier of a bus to which the identified fluid-handling device is communicatively coupled through its disclosure that in some embodiments, the controller is communicably coupled (e.g., wirelessly, via wired communication, or a combination thereof) to one or more communication stations 320. In some embodiments, data may be transmitted between the communication station 320 and the chemical injection system 310 via a particular communication protocol (e.g., RS-232, RS-485 (Modbus or EIA-485), RS-422 (or EIA-422), TCP/ IP, Fieldbus, DeviceNet, and Profibus, to name but a few) and over a certain communication form (e.g., cellular, RF, satellite, or other type of communication form). EX1006, 12:29-39; Claim 1.

A POSITA would recognize that Gutierrez discloses the retrieving from memory records that include protocol and bus identifiers as recited in the '078 Patent. EX1002, ¶110. Therefore, Gutierrez discloses this limitation.

Claim 2 is anticipated by Gutierrez or would be obvious to a POSITA in view of Gutierrez.

3. Claim 6

Almadi discloses the elements of Claim 1 for the reasons discussed above and incorporated herein.

a. The method of claim 1, wherein: the at least some of the translated instructions are effective to cause the at least one of the fluid-handling devices to attempt to achieve the plurality of different target state at the different times.

Gutierrez discloses a translation module that converts communication protocol messages into the communication protocol and sends the translated messages to the respective 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.”).

Gutierrez discloses a server receiving values for operational parameters of the transmission system based on a command received from a user, as well as transmitting commands based on one or more operational parameters to adjust control parameters in the system, such as the speed of a motor, in an attempt to achieve the target state. EX1006, 3:40-45, 5:58-67, 6:1-10, 6:13-23, 6:24-44, 9:21 25, 9:55-64, 10:27-30, 10:39-43, 11:18-26, 13:9-26.

A POSITA would recognize that Gutierrez discloses causing the fluid-handling devices to attempt to achieve a plurality of target states as recited in the ‘078 Patent. EX1002, ¶114.

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

4. Claim 16

Almadi discloses the elements of Claim 1 for the reasons discussed above and incorporated herein.

a. [16.1] The method of claim 1, comprising: receiving, at a remote server system, via a network, user credentials from a user device;

Gutierrez discloses receiving, at a remote server system, via a network, user credentials from a user device through its disclosure that the base transceiver 325 may communicate with the computer 305 over a communications network 330, which is an enterprise or secured network, as well as a VPN (virtual private network) between computer 305 and other computing devices communicably coupled to the base transceiver 325. EX1006, 12:53-64.

A POSITA would recognize Gutierrez's disclosure of a secured network and a VPN that user credentials are required to access a user device. EX1002, ¶115. Thus, Gutierrez discloses this claim element.

b. **[16.2] identifying, with the remote server system, an account based on the user credentials, the account including identifiers of the oil well, the petro water disposal or re- injection facility, or the petroleum pumping station and at least one other facility;**

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 well site, hydrocarbon piping system, or other hydrocarbon production facility."). Gutierrez discloses that computer 305 is a server. EX1006, 11:34-37.

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 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. =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. 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 further recognize from the above disclosure that Gutierrez discloses identifying an account associated with an oil well, the petro water disposal or re-injection facility, or the petroleum pumping station and at least one other facility through its disclosure of a secured network and chemical injection system. EX1002, ¶119. Therefore, Gutierrez discloses this limitation.

c. **[16.3] receiving from the user device, at the remote server system, a request corresponding to at least one of the received instructions, the request including an identifier of the oil well, the petro water disposal or reinjection facility, or the petroleum pumping station;**

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.

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 ’078 Patent. EX1002, ¶123.

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 ’078 Patent because the user controls “each” component of the chemical injection system with the disclosed GUI. EX1002, ¶¶12-123.

A POSITA would recognize that Gutierrez discloses receiving a request corresponding to at least one received instruction as recited in the '078 Patent. EX1002, ¶123. Therefore, Gutierrez discloses this limitation.

d. **[16.4] identifying, with the remote server system, an Internet Protocol address at which the network interface is reachable based on the identifier of the oil well, the petro water disposal or re-injection facility, or the petroleum pumping station; and**

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 communications between components of the disclose system through the internet. EX1006, 12:55-64.

A POSITA would recognize that Gutierrez discloses identifying an Internet Protocol address at which the network interface is reachable as recited in the '078 Patent. EX1002, ¶¶125-127. Therefore, Gutierrez discloses this limitation.

e. **[16.5] sending, from the remote server system, the at least one of the received instructions to the identified Internet Protocol**

address in response to the request.

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 from the above disclosure that Gutierrez discloses sending the received instructions to the Internet protocol. EX1002, ¶129. Thus, Gutierrez discloses this claim element.

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

5. Claim 17

Gutierrez discloses the elements of Claims 1 and 16 for the reasons discussed above and incorporated herein.

a. **[17] The method of claim 16, wherein the user device is a smartphone executing a smartphone application that communicates with the remote server system via an application**

program interface.

Gutierrez discloses that the user or operator connects to the controller 130 to receive feedback data (e.g., operational data of the motor 110, pump 105, or any other component of the system 100) without regard to a particular protocol understood by the user's device (i.e., computer, laptop, PDA, cell phone). EX1006, 9:65-64.

A POSITA would understand that a cell phone adapted to connect to controller 130 would be a smartphone capable of executing a smartphone application. EX1002, ¶¶130-131.

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

6. Claim 18

Almadi discloses the elements of Claims 1 and 16 for the reasons discussed above and incorporated herein.

b. **[18.1] The method of claim 16, wherein receiving from the user device the request corresponding to the at least one of the received instructions comprises: receiving the request from a web interface in a web browser executing on the user device.**

Gutierrez discloses that the communications network 330 may be all or a portion of an enterprise or secured network; a VPN merely between computer 305 and other computing devices communicably coupled to the base transceiver 325; one or more local area networks (LANs), radio access networks (RANs), metropolitan area networks (MANs), wide area networks (WANs), all or a portion of the global computer network known as the Internet. EX1006, 12:55-64. Gutierrez also discloses a remote computing system with a graphical user interface (GUI) to connect to the system. EX1006, 2:26-29.

A POSITA would understand that connecting to the network through the internet would require a web interface in a web browser executing on the user device. EX1002, ¶133.

A POSITA would understand that a web browser executing on the user device is a graphical user interface (GUI). EX1002, ¶133.

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

7. Claim 19

Gutierrez discloses the elements of Claim 1 for the reasons discussed above and incorporated herein.

a. **[19.1] The method of claim 1, comprising: producing oil or gas; disposing of petro water; or re-injecting petro water.**

Gutierrez discloses producing oil or gas; disposing of petro water; or re-injecting petro water through its disclosure that sensor readings of fluidic pressure, fluidic storage level, and percentage of water content in the fluidic system. EX1006, 1:18-32 ("Conduit systems that carry and/or transport one or more fluids may utilize injection systems to insert other fluids (e.g., additives, inhibitors, or otherwise) into

the conduit system. Hydrocarbon systems that transport hydrocarbon fluids, such as oil and/or gas or other fluids, often receive injected fluids to, for example, control corrosion within the conduit or pipeline; prevent paraffin deposition; and break emulsions in the transported hydrocarbon fluids. The injected fluids may also be used for water removal or separation from hydrocarbon gasses or liquids. In some instances, a chemical injector may be associated with a well site or other hydrocarbon production facility to inject chemical additives into a pipeline fluidly coupled at the wellsite with a wellbore producing hydrocarbons."), 13:27-49 ("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 from the above disclosure of a chemical injection system that Gutierrez discloses producing oil or gas; disposing of petro water or reinjecting petro water. EX1002, ¶135.

Claim 19 is anticipated by Gutierrez, or would be obvious to a POSITA in view of Gutierrez.

C. Ground 3: SCADA Anticipates Claims 1, 11-12 or would be obvious to a POSITA.

Independent claim 1 and dependent claims 2-3, 5-6, 9, and 11-12 are anticipated by SCADA: Supervisory Control and Data Acquisition, 4th Edition ("SCADA") under 35 U.S.C. §102, or would be obvious to a POSITA in view of

SCADA under 35 U.S.C. § 103.

1. Claim 1

a. [1.1] A method, comprising:

To the extent that the Board finds that the preamble is limiting, SCADA discloses a method for remotely controlling a fluid-handling device of an oil well, a petro water disposal or re-injection facility, or a petroleum pumping station.

SCADA discloses that "the technology called SCADA has developed over the last forty years (since about the mid-1960's). It is a collection of separate technologies, including process instrumentation, various communication methods, and computer applications." SCADA at Preface.

A POSITA would recognize that SCADA discloses a method. EX1002, ¶139. Therefore, SCADA discloses the method.

b. [1.2] receiving, via a network interface, a plurality of user-directed instructions to control fluid-handling devices that monitor or control one or more fluids at an oil well, a petro water disposal or re-injection facility, or a petroleum pumping station, the plurality of instructions being received encoded in a shared protocol;

SCADA discloses receiving, via a network interface, a plurality of user-directed instructions to control fluid-handling devices through its disclosure of the major elements of a SCADA system: "At the center is the operator, who interfaces with the system through some form of input/output (I/O) device[, which] in turn communicates with the master terminal unit (MTU) [that communicates with] one or more remote terminal units (RTUs), each of which communicates with sensors or actuators at the process" site. EX1007 at 12, Figure 2-1.

SCADA discloses that "[M]odern RTUs are essentially microcomputers with special equipment at one end to interface with the long-range communications link and with special equipment at the other end to interface with the sensors, actuators, and calculators in the process." EX1007 at 92-93.

SCADA discloses that "The RTU outputs an electrical signal that . . . is received by a transducer . . . to open or close the valve by an amount proportional to the current output by the RTU." EX1007 at 73.

A POSITA would recognize from the above disclosures that SCADA discloses instructions to control fluid-handling devices that monitor or control one or more fluids at an oil well, a petro water disposal or re-injection facility, or a petroleum pumping station, as recited in the '078 Patent. EX1002, ¶143.

A POSITA would recognize from the above disclosures that SCADA discloses receiving a plurality of user-directed instructions to control fluid-handling devices as recited in the '078 Patent. EX1002, ¶144. Therefore, Gutierrez discloses this limitation.

c. **[1.3] obtaining a target state of at least one of the fluid- handling devices based on at least some of the plurality of instructions, wherein obtaining a target state of at least one of the fluid-handling devices based on at least some of the plurality of instructions comprises:**

SCADA discloses that "the signal would be more likely to act as the remote set point of a PID (proportional/integral/derivative) controller," and that output from the controller would control a valve, a louver, a machine speed, or any number of parameters that could be described by an analog value between 0 and 100 percent." EX1007 at 100-01.

A POSITA would understand that SCADA's disclosure of a signal acting as a set point and the serial transmission of bits for each pulse output is the obtaining a target state of the fluid-handling devices based on a plurality of instructions as claimed in the '078 Patent. EX1002, ¶146. Thus, SCADA discloses this claim element.

d. **[1.4] after receiving the instructions, determining a plurality of different target states of the at least one of the fluid- handling devices, the plurality of different states each corresponding to different times;**

SCADA discloses that the signal is used "as the remote set point of a PID (proportional/integral/derivative) controller, and the output from the controller would control a valve, a louver, a machine speed, or any number of parameters that could be described by an analog value between 0 and 100 percent" and "the pulse control method…allows a stepper motor to be incremented or decremented by a specified number of steps. EX1007 at 100-01.

A POSITA would readily understand that SCADA's disclosure of the set point signal and analysis of the controller output is the determining a plurality of different target states corresponding to different times claimed in the '078 Patent. EX1002,

¶148. Thus, SCADA discloses this claim element.

e. **[1.5] for each of the plurality of instructions, selecting a respective protocol or protocols from among a plurality of protocols different from the shared protocol, wherein the respective fluid-handling device or devices to which the respective instruction is directed are responsive to the selected respective protocol or protocols, wherein at least some of the selected protocols are different from one another;**

SCADA discloses that "[M]odern RTUs are essentially microcomputers with special equipment at one end to interface with the long-range communications link and with special equipment at the other end to interface with the sensors, actuators, and calculators in the process." EX1007 at 92-93.

SCADA also discloses "there are several languages that can be used between field instruments and RTUs." EX1007 at 71 (describing physical wire communication). SCADA further discloses translators "called transducers in the process control industry...[that] change the language from electrical current (I) to air pressure (P)." EX1007 at 72-73.

A POSITA would further understand from SCADA's disclosure of a protocol driver to translate communications with each of the RTUs and its disclosure of various protocol languages is the selecting of a protocol from a plurality of instructions from a plurality of different protocols claimed in the '078 Patent. EX1002, ¶151. Thus, SCADA discloses this claim element.

f. **[1.6] after determining the plurality of different target states, translating each received instructions into one or more translated instructions encoded in the selected respective protocol or**

protocols, the one or more translated instructions including the determined plurality of different target states; and

As shown above for element 1.4, and incorporated herein in its entirety, SCADA discloses determining the plurality of different target states.

SCADA also discloses "there are several languages that can be used between field instruments and RTUs." EX1007 at 71 (describing physical wire communication). SCADA further discloses translators "called transducers in the process control industry...[that] change the language from electrical current (I) to air pressure (P)." EX1007 at 72-73.

A POSITA would understand that the use of different protocols by the protocol driver requires that the protocols be translated (i.e., from electrical signals to control signals) and that the translated instructions include the determined plurality of different target states as claimed in the '078 Patent. EX1002, ¶153. Thus, SCADA discloses this claim limitation.

g. **[1.7] sending each translated instructions to at least the fluid-handling device to which the respective translated instruction is directed, wherein at least some of the translated instructions are effective to cause the at least one of the fluid- handling devices to attempt to achieve the target state**

As shown above for element 1.4, and incorporated herein in its entirety, SCADA discloses attempting to achieve the target state.

SCADA discloses that at "the center is the operator, who interfaces with the system through some form of input/output (I/O) device[, which] in turn communicates with the master terminal unit (MTU) [that communicates with] one or more remote terminal units (RTUs), each of which communicates with sensors or actuators at the process" site. EX1007 at 12, FIG. 2-1.

SCADA discloses that "[M]odern RTUs are essentially microcomputers with special equipment at one end to interface with the long-range communications link and with special equipment at the other end to interface with the sensors, actuators, and calculators in the process." EX1007 at 92-93. SCADA discloses that "The RTU outputs an electrical signal that . . . is received by a transducer . . . to open or close the valve by an amount proportional to the current output by the RTU." EX1007 at 73.

A POSITA would understand that SCADA's disclosures of a protocol translator and a network interface for routing connection between a host and remote subsystems are the sending the translated commands as claimed in the '078 Patent. EX1002, ¶156. Thus, SCADA discloses this claim element.

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

2. Claim 11

Almadi discloses the elements of Claim 1 for the reasons discussed above and incorporated herein.

a. **The method of claim 1, wherein at least some of the received instructions identify an automatic mode in which a collection of target states are computed to operate within process constraints.**

SCADA discloses at least some of the received instructions identify an automatic mode in which a collection of target states are computed to operate within process constraints through its disclosure that "automatic control happens when a system senses that a process variable has changed and modifies a control parameter without bringing a human operator into the decision. An example in an electric power transmission system is the automatic arming of a local load-shedding device to protect a transmission line from overloading only under very specific conditions that could be detected by the SCADA system." EX1007 at 199.

A POSITA would understand from SCADA's disclosure automatic control is the automatic mode in which a collection of target states is computed as claimed in the '078 Patent. EX1002, ¶159.

Claim 11 is anticipated by SCADA or would be obvious to a POSITA in view of SCADA.

3. Claim 12

Almadi discloses the elements of Claim 1 for the reasons discussed above and incorporated herein.

a. **The method of claim 1, wherein at least some of the received instructions correspond to a manual mode in which an individual one of the fluid-handling devices is remotely controlled by a user**

SCADA discloses that the received instructions correspond to a manual mode in which an individual one of the fluid-handling devices is remotely controlled by a user through its disclosure that remote control occurs when a decision to modify a control parameter is carried out at a significant distance from the process. EX1007 at 199.

A POSITA would understand from the above SCADA disclosures that the on-demand time modification of control parameters is the manual mode in which an individual fluid-handling device is controlled by a user. EX1002, ¶162.

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

D. 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* EX1008 (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 ’078 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,

By: /Robert D. Katz/

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ATTORNEY FOR PETITIONER TANKLOGIX

U.S. PATENT NO. 9,342,078 – LISTING OF CHALLENGED CLAIMS

CLAIM NO.	CLAIM ELEMENTS
Claim 1	[1.1] A method, comprising: [1.2] receiving, via a network interface, a plurality of user-directed instructions to control fluid-handling devices that monitor or control one or more fluids at an oil well, a petro water disposal or re-injection facility, or a petroleum pumping station, the plurality of instructions being received encoded in a shared protocol; [1.3] obtaining a target state of at least one of the fluid-handling devices based on at least some of the plurality of instructions, wherein obtaining a target state of at least one of the fluid-handling devices based on at least some of the plurality of instructions comprises: [1.4] after receiving the instructions, determining a plurality of different target states of the at least one of the fluid-handling devices, the plurality of different states each corresponding to different times; [1.5] for each of the plurality of instructions, selecting a respective protocol or protocols from among a plurality of protocols different from the shared protocol, wherein the respective fluid-handling device or devices to which the respective instruction is directed are responsive to the selected respective protocol or protocols, wherein at least some of the selected protocols are different from one another; [1.6] after determining the plurality of different target states, translating each received instructions into one or more translated instructions encoded in the selected respective protocol or protocols, the one or more translated instructions including the determined plurality of different target states; and

CLAIM NO.	**CLAIM ELEMENTS**
	[1.7] sending each translated instructions to at least the fluid-handling device to which the respective translated instruction is directed, wherein at least some of the translated instructions are effective to cause the at least one of the fluid-handling devices to attempt to achieve the target state.
Claim 2	[2.1] The method of claim 1, wherein selecting a respective protocol or protocols comprises: [2.2] parsing, from at least one of the received instructions, an identifier of one of the fluid-handling devices; and [2.3] based on the parsed identifier, retrieving from memory one or more records, including an identifier of at least one selected respective protocol and an identifier of a bus to which the identified fluid-handling device is communicatively coupled.
Claim 3	[3.1] The method of claim 2, wherein sending each translated instructions to at least the fluid-handling device to which the respective instruction is directed comprises: [3.2] sending an address of the identified fluid-handling device on the identified bus in association with at least some of the translated instructions.
Claim 4	[4.1] The method of claim 2, wherein sending each translated instructions to at least the fluid-handling device to which the respective instruction is directed comprises: [4.2] providing at least some of the translated instructions to a link-layer device connected to the identified bus; and [4.3] encoding the translated instructions with the link-layer device in accordance with the physical medium by which the identified bus is implemented.
Claim 5	[5.1] The method of claim 2, wherein sending each translated instruction to at least the fluid-handling device to which the respective instruction is directed comprises:

CLAIM NO.	**CLAIM ELEMENTS**
	[5.2] providing at least some of the translated instructions to a digital-to-analog converter connected to the identified bus; and [5.3] sending the at least some of the translated instructions to the identified fluid-handling device with the digital-to-analog converter.
Claim 6	[6.1] The method of claim 1, wherein: [6.2] the at least some of the translated instructions are effective to cause the at least one of the fluid-handling devices to attempt to achieve the plurality of different target state at the different times.
Claim 7	[7] The method of claim 6, comprising: losing a network connection by which at least some of the plurality of user-directed instructions are received; and after losing the network connection, continuing to cause the at least one of the fluid-handling devices to attempt to achieve the plurality of different target state at the different times and continuing to execute instructions among the plurality of received instructions received prior to losing the network connection before entering an automatic mode.
Claim 8	[8] The method of claim 6, wherein the plurality of different states ramp up or ramp down a motor speed of a motor of the at least one of the fluid-handling devices.
Claim 9	[9] The method of claim 6, wherein the plurality of different states oscillate a physical state of the at least one of the fluid-handling devices.
Claim 11	[11] The method of claim 1, wherein at least some of the received instructions identify an automatic mode in which a collection of target states are computed to operate within process constraints.
Claim 12	[12] The method of claim 1, wherein at least some of the received instructions correspond to a manual mode in which an individual one of the fluid-handling devices is remotely controlled by a user.
Claim 13	[13.1] The method of claim 1, comprising:

CLAIM NO.	**CLAIM ELEMENTS**
	[13.2] before sending at least one of the translated instructions, accessing a constraint value stored in memory; [13.3] determining that the at least one of the translated instructions will not violate the constraint value; and [13.4] in response to the determination, sending the at least one of the translated instructions.
Claim 15	[15] The method of claim 1, wherein a given one of the fluid-handling devices comprises a proportional-integral-derivative controller, and wherein at least some of the translated instructions adjust a set point of the proportional-integral-derivative controller.
Claim 16	[16.1] The method of claim 1, comprising: [16.2] receiving, at a remote server system, via a network, user credentials from a user device; [16.3] identifying, with the remote server system, an account based on the user credentials, the account including identifiers of the oil well, the petro water disposal or re-injection facility, or the petroleum pumping station and at least one other facility; [16.4] receiving from the user device, at the remote server system, a request corresponding to at least one of the received instructions, the request including an identifier of the oil well, the petro water disposal or reinjection facility, or the petroleum pumping station; [16.5] identifying, with the remote server system, an Internet Protocol address at which the network interface is reachable based on the identifier of the oil well, the petro water disposal or re-injection facility, or the petroleum pumping station; and

CLAIM NO.	**CLAIM ELEMENTS**
	[16.6] sending, from the remote server system, the at least one of the received instructions to the identified Internet Protocol address in response to the request.
Claim 17	[17] The method of claim 16, wherein the user device is a smartphone executing a smartphone application that communicates with the remote server system via an application program interface.
Claim 18	[18.1] The method of claim 16, wherein receiving from the user device the request corresponding to the at least one of the received instructions comprises: [18.2] receiving the request from a web interface in a web browser executing on the user device.
Claim 19	[19.1] The method of claim 1, comprising: [19.2] producing oil or gas; [19.3] disposing of petro water; or [19.4] re-injecting petro water.

CERTIFICATION OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This Petition includes 13,867 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 '078 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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Dated: February 28, 2025

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