UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FieldComm Group,
Petitioner,

v.

Sipco, LLC,
Patent Owner.

Patent No. 6,437,692

Issue Date: August 20, 2002

Title: System And Method For Monitoring And Controlling Remote Devices

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PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT 6,437,692 UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. §§ 42.100 ET SEQ.

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TABLE OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 6,437,692 (issued August 20, 2002), *System And Method For Monitoring And Controlling Remote Devices.*
1002	Kantronics KPC-3 – Users Guide, 1998 ("Kantronics")
1003	AX.25 Amateur Packet-Radio Link-Layer Protocol, Version 2.0, October 1984 ("AX.25 Protocol")
1004	"Adding Packet Radio to the Ultrix Kernel," Neuman, Clifford, December 1987 ("Ultrix")
1005	Expert Declaration of Fred Goldstein ("Expert Decl.")
1006	Claim Construction Opinion Filed July 30, 2012 in the case of *SIPCO, LLC v. ABB, INC., et al,* Civil Action No. 6:11-CV-0048 LED-JDL.
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I. COMPLIANCE WITH REQUIREMENTS FOR A PETITION FOR *INTER* PARTES REVIEW

A. Notice of Real Party in Interest

Pursuant to 37 C.F.R. § 42.8(b)(1), notice is hereby given that the real parties-in-interest in this petition are FieldComm Group ("Petitioner") and HART Communication Foundation.

B. Notice of Related Matters

U.S. Patent No. 6,437,692 (the '692 Patent) (Ex. 1001) are asserted against *Emerson Electric Co. et al v. SIPCO LLC et al*, No 1:13-CV-02528 (N.D. Ga, July 31, 2013); *SIPCO, LLC v. ADT Security Services et al*, No 9:11-CV-80521 (S.D. Fl, May 6, 2011); *SIPCO, LLC v. ABB et al*, No 6:11-CV-00048 (E.D. Tx, Jan. 31, 2011); *SIPCO, LLC v. Datamativ, Ltd. et al*, No 6:09-CV-00532 (E.D. Tx, Nov. 24, 2009); *Silver Spring Networks, Inc v. SIPCO, LLC*, No 1:09-CV-02215 (N.D. Ga, Aug. 14, 2009; *SIPCO, LLC v. Florida Power & Light Company et al*, No 1:09-CV-22209 (S.D. Fl, July 27, 2009);

Petitioner is also seeking *inter partes* review of related U.S. Patent No. 7,697,492 and U.S. Patent No. 7,103,511 which are to similar technologies. If instituted, Petitioner requests that each of the related *inter* partes review proceedings be assigned to the same Board for administrative efficiency.

C. Notice of Lead and Backup Counsel

Pursuant to 37 C.F.R. §§ 42.8(b)(3), (b)(4), and 42.10(a), Petitioner designates the following lead and backup counsel:

Lead Counsel	Backup Counsel
Alfred Zaher (Reg. No. 42,248) alfred.zaher@novakdruce.com NOVAK DRUCE CONNOLLY BOVE + QUIGG LLP Two Logan Square 100 North 18th Street Suite 300 Philadelphia, PA 19103 Telephone: 215.825.5220 Fax: 215.825.5219	Jay Guliano (Reg. No. 41,810) Jay.guiliano@novakdruce.com Ryan Murphy (Reg. No. 66,285) ryan.murphy@novakdruce.com NOVAK DRUCE CONNOLLY BOVE + QUIGG LLP 1875 I (Eye) Street, N.W. Eleventh Floor Washington, D.C. 20006 Telephone: 202.331.7111 Fax: 202.293.6229 Gerald Thomas (Reg. No. 64,464) gerald.thomas@novakdruce.com NOVAK DRUCE CONNOLLY BOVE + QUIGG LLP 555 Mission Street Thirty-Fourth Floor San Francisco, CA 94105 Telephone: 415.814.6161 Fax: 415.814.6165

D. Service Information

Petitioner consents to service by e-mail to the following address: 692FieldCommIPR@novakdruce.com.

E. Grounds for Standing

Petitioner certifies under 37 C.F.R. § 42.104(a) that the patent for which review is requested is available for *inter partes* review and that Petitioner is not barred or estopped from requesting an *inter partes* review challenging the patent claims on the grounds identified in the petition.

F. Statement of Precise Relief Requested

Petitioner respectfully requests that claims 1-64 of U.S. Patent No. 6,437,692 ("the '692 patent") (Ex. 1001) be cancelled based on the following grounds of unpatentability, explained in detail below.

Ground 1 – Claims 1-64 are rendered obvious under § 103 by Kantronics in view of AX.25 Protocol and Ultrix.

II. RELEVANT INFORMATION CONCERNING THE CONTESTED PATENT

A. Person of Ordinary Skill in the Art

A person of ordinary skill in the art in the field of the '692 patent is a person who has, through formal education or extensive practical experience, the equivalent of a Bachelor's Degree in Electrical Engineering and 2-3 years of experience in using, making, or selling radio communications or computer network systems. *See* Expert Decl. ¶6.

B. Claim Construction

A claim in *inter partes* review is given the "broadest reasonable construction in light of the specification" See 37 C.F.R. § 42.100(b); *see also In re ICON Health and Fitness, Inc.* 496 F.3d 1374, 1379 (Fed. Cir. 2007). For the purposes of this proceeding, the claim terms are presumed to take on their broadest reasonable interpretation in light of the specification. Petitioner provides a more detailed explanation of the broadest reasonable interpretation of certain terms present in the challenged claims in the subsections below. The constructions set forth below are provided for the purposes of this *inter partes* review only and may be different than constructions proposed in litigation forums using a different standard.

1. "select information"

The term "select information" should be construed as **data collected from another device**. Ex. 1001, '692 patent, 2:54-65.

2. "wireless transmitter"

The term "wireless transmitter" should be construed as **a wireless device that transmits information**. Ex. 1001, '692 patent, 5:65-6:14.

3. "low-power radio-frequency"

The term "low-power radio-frequency" has been construed as **power having limited transmission range** in the Claim Construction Opinion filed July 30, 2012 in the case of *SIPCO, LLC v. ABB, INC., et al,* Civil Action No. 6:11-CV-0048 LED-JDL, and Petitioner hereby agrees with this construction. Ex. 1001, '692

patent, 6:59-7:16; Expert Decl. ¶18; and Ex. 1006, Claim Construction Order at p. 44.

4. "transceiver"

A "transceiver" should be construed as **devices that transmit and/or receive data.** '692 patent, 2:54-65.

III. OVERVIEW OF THE '692 PATENT

A. Brief Description

The '692 patent is directed to a system for monitoring a variety of conditions within a defined remotely located region by using a plurality of wireless transmitters, wherein each wireless transmitter is integrated into a sensor adapted to monitor a particular data input. Ex. 1001, '692 patent, Abstract.

One or more sensor/actuators are integrated with transceivers to transmit a relatively low power RF signal comprising sensed data as well as a transmitter identification address. Ex. 1001, '692 patent, 5:48-53. A plurality of relatively low-power radio-frequency (RF) transceivers are also dispersed geographically at defined locations and are configured to receive the sensed data and transmitter identification address from the nearby wireless transmitter and further transmit the sensed data and transmitter identification address to a gateway. This gateway is configured to receive and translate the sensed data and transmitter identification address and provide the data to a computer over the WAN.

The computer is configured to execute a computer program that formats and stores the data for retrieval upon demand from a remotely located device over a wide area network.

B. Prosecution History of the '692 Patent

The '692 Patent was filed on November 12, 1999. In the first Office Action mailed June 4, 2001, all claims 1-68 were rejected under 35 U.S.C. 103 for being obvious over: (1) U.S. Patent No. 5,845,230 to Lamberson (claims 1-2, 12-19, and 59-61); (2) Lamberson in view of U.S. Patent No. 5,736,965 to Mosebrook *et al.* (claims 3-10, 20-22, 26-58 and 64-68); (3) U.S. Patent No. 5,917,405 to Joao (claims 1 and 4-11); and (4) Lamberson in view of Mosebrook and Joao (claims 23-25 and 62-63).

In a Response, on August 14, 2001, the applicant amended claims 1, 7, 17, 20, 26, 34, 38, 41, 43, 44, 52, 59 and 64; and cancelled claims 5, 6, 47, and 53. The amended claims added language directed to relatively low-power radio frequency. In response, on October 23, 2001, the Office mailed a Final Office Action wherein all remaining claims were rejected again (claims 1-4, 7-46, 48-52, and 54-68). The Office confirmed the same rejections from the previous Office Action and stated that the "amendment additionally adds "low power" RF transceivers. It is held that "low power" is a relative term and adds no further distinction to the claims." *See* October 23, 2001 Office Action.

In a Response, on January 11, 2002, the applicant filed a Request For Reconsideration of Final Office Action arguing for confirmation of the pending claims without any further amendments. The Office responded with an Advisory Action on March 15, 2002 wherein the Office was not convinced by the Patent Owner's arguments in the January 11, 2002 paper and maintained the same rejections (i.e. claims 1-4, 7-46, 48-52, and 54-68). The Patent Owner followed up with an Appeal to the Board on March 12, 2002. In response to the Appeal Brief, all the claims were allowed (although renumbered 1-64) in a Notice of Allowability. In the Notice of Allowability, the Board stated:

"[I]t is determined that while the prior art teach generally a sensing and control system in which data gathered on a site is transmitted wirelessly to a network and then to a remote computer for storage, monitoring of the data, and in response sending back control command signals to actuators on the site to facilitate desired actions, the claimed embodiments each having some combinations of additional detailed features are not taught or duly suggested by the prior art. These detailed features including the use of low powered radio frequency (in general known for localized communication) transmitters/transceivers and/or repeater transceivers for communicating between the sensor/actuator and the gateway; the use of transmitter/transceiver/gateway identification codes and information fields in the data; the use of data and protocol translators in the sensor/actuator and

gateway, respectively; client access to the remote computer data; multiple programs residing on the remote computer the provides a corresponding control command signal in response to an application system input from a sensor." *See* Notice of Allowability at p. 2.

IV. SPECIFIC GROUNDS FOR PETITION

The challenged claims are unpatentable for the reasons set forth in detail below, per 37 C.F.R. § 42.104(b)(4)–(5).

Kantronics was published in 1997 and therefore constitutes prior art under 35 U.S.C. § 102. Kantronics discloses a system for remote data collection, assembly, and storage by way of a packet radio station using the AX.25 network protocol. The system includes a transceiver, a terminal node controller (i.e. "TNC"), and a general purpose computer. Kantronics at p. 18.

AX.25 Protocol was published in 1984 and therefore constitutes prior art under 35 U.S.C. § 102. AX.25 Protocol discloses the configuration of messages for the AX.25 network protocol in amateur packet-radio systems in order to ensure link-layer compatibility between stations. AX.25 Protocol at p. ii.

Ultrix was published in 1987 and therefore constitutes prior art under 35 U.S.C. § 102.[1] Ultrix discloses the integration of an IP gateway for use by a computer to link an IP-enabled computer to the AX.25 amateur packet Radio network.

The Kantronics system is directed to "hardware and software design incorporating the AX.25 Level 2 Version 2 Packet protocol as adopted by the American Radio Relay League." Kantronics at copyright page. AX.25 Protocol describes the particular message format and parsing of messages in the AX.25 network protocol. Ultrix describes how to connect an AX.25 network to an IP network by modifying an AX.25 TNC by creating a gateway between the two networks. A person of ordinary skill in the art understood from Kantronics how a user could remotely control and monitor the liquid level in a tank using the AX.25

[1] The publication, attached as Exhibit 1004, by Neuman and Yamamoto titled "Adding Packet Radio to the Ultrix Kernel" was published December 7, 1987. Included as Exhibit 1007 is an index maintained by the University of Washington confirming that the Technical Report referred to in this proceeding as Ultrix, was published in 1987, more than 10 years prior to the earliest possible priority date of the challenged '692 patent. *See* Exhibit 1007 at 12 (87-12-07 NEUMAN, YAMAMOTO).

network. The particular format of AX.25 network messages is described in AX.25 Protocol. Ultrix describes the desirability of "taking advantage of the IP implementations that already exist for PCs" to establish a bridge between AX.25 network devices and IP devices. Ultrix at Abstract.

As further explained by Mr. Goldstein, it would have been obvious to a person of ordinary skill in the art at the relevant time to combine the teachings of Kantronics with those of AX.25 Protocol and Ultrix to teach each and every feature of claims 1-64 of the '692 patent. A person of ordinary skill in the art would have recognized that Kantronics, AX.25 Protocol and Ultrix are each directed to device-to-device packet radio messages using the AX.25 network protocol. Specifically, each describe systems and methods for communicating messages between devices using the packet radio network (Kantronics, AX.25 Protocol and Ultrix), with further recognition of the desirability of communications between AX.25 protocol-based devices and IP-based devices (Kantronics and Ultrix). Furthermore, in 1998, it was common practice for individuals designing control-based systems to research and combine the features of existing systems, particularly where those features were complementary. Combining Kantronics, AX.25 Protocol and Ultrix therefore would have been well within the capabilities of a person of ordinary skill in the art. The combination represents a commonsense amalgamation of the wireless remote tank control features of Kantronics, with the

IP bridging features of Ultrix to communicate with a radio packet enabled device, leveraging the radio packet network underpinnings described by AX.25 Protocol. *See* Expert Decl. at ¶46.

A. Kantronics in view of AX.25 Protocol and Ultrix Renders Obvious Claims 1-64 of the '692 Patent

Claim 1

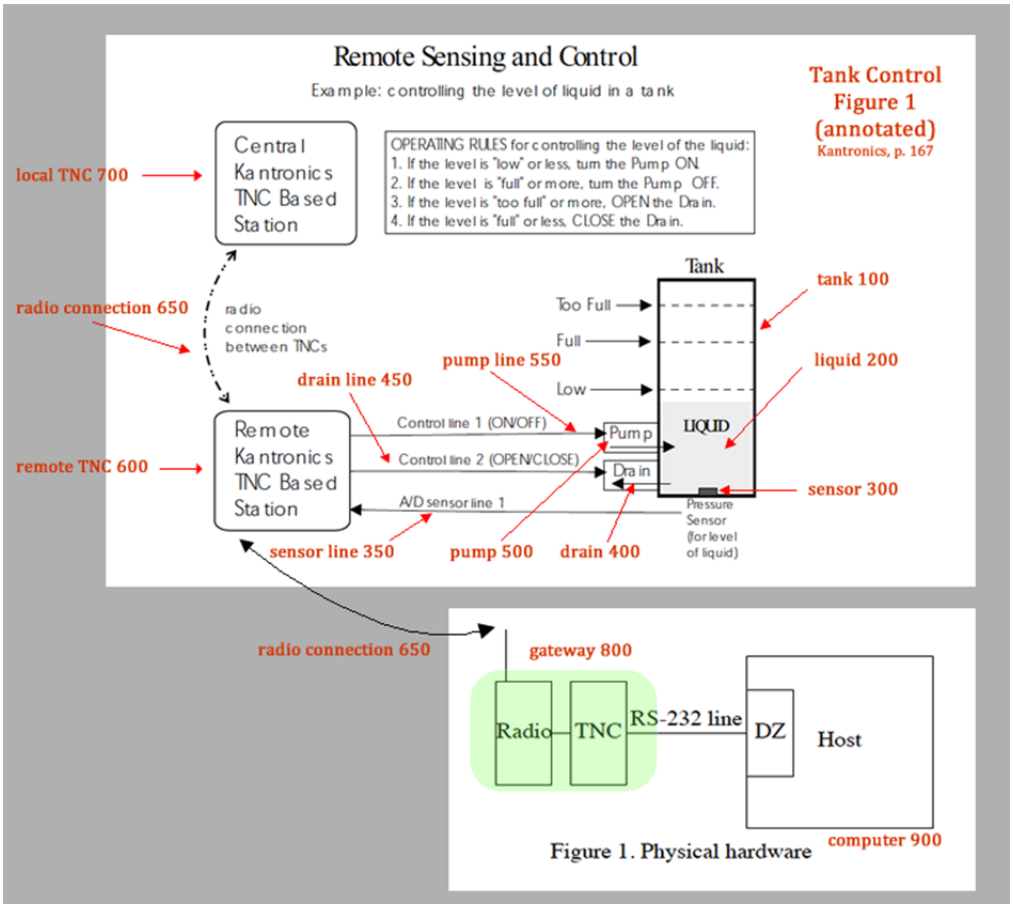
[1a] A system for remote data collection, assembly, and storage comprising:

Kantronics discloses a system for remote data collection, assembly, and storage by way of a packet radio station that includes a transceiver, a terminal node controller (i.e. "TNC"), and a station that includes a general purpose computer. Kantronics at p. 18. Wherein, a user may "use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics at p. 166. Shown below on the right hand portion of the figure are Kantronics stations for the remote sensing and control of a tank 100.

A person of ordinary skill in the art would understand how to implement the rules "for controlling the level of the liquid" in the tank by way of a software program. *See* Expert Dec. ¶47. Specifically, following the algorithm outlined in the "Remote Sensing and Control" figure, a person of ordinary skill in the art would understand that a remote software program could monitor the level of the tank 100 via the pressure sensor 300, implementing rules #1-#4, by controlling

drain 400 and pump 500 remotely by wirelessly exchanging packet radio messages with remote TNC 600. *See* Expert Dec. ¶47.

A person of ordinary skill in the art would understand that a remote tank control program could be implemented "via a terminal program running in the computer in the central TNC station." Kantronics at p. 166. Ultrix further discloses "a gateway between users speaking other protocols over packet radio, and systems running IP." Ultrix at p. 2. A person of ordinary skill in the art would understand from Ultrix that the gateway 800 connects the computer 900 to the packet radio network, including local TNC 700 and remote TNC 600. Further, because Kantronics discloses a computer program to implement the tank control program, a person of ordinary skill in the art would understand that computer 900 could also run the tank control program to control tank 100 via remote TNC 600, in lieu of control via local TNC 700.



Kantronics at 167; Ultrix at 2 (combined annotated figure).

[1b] a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device,

Kantronics discloses the algorithm for a computer program to remotely control and sense operations at a tank. Kantronics at p. 166. The AX.25 protocol, used by Kantronics devices such as local TNC 700 and remote TNC 600, "defines a protocol to be used between two Amateur Radio stations in a point-to-point communications environment." AX.25 Protocol at p. v. Wherein, "packet radio

transmissions are sent in small blocks of data, called frames. Each frame is made up of several smaller groups, called fields." AX.25 Protocol at p. 2. Within each frame, the "information field is used to convey user data from one end of the link to the other." AX.25 Protocol at p. 3.

A person of ordinary skill in the art would understand that a computer program (*e.g.,* remote tank control program), running on computer 900, formats (*e.g.,* configures Kantronics commands as AX.25 messages for transmission) and stores (*e.g.,* receives Kantronics AX.25 messages) select information (*e.g.,* pressure sensor 300 messages) for retrieval upon demand (*e.g.* viewing of time-based activity of tank liquid level controlling operations) from a remotely located device (*e.g.,* tank 100) via remote TNC 600. Kantronics at pp. 19 and 117; Ultrix (identifying support for "separate program" receiving data payloads delivered via AX.25 protocol).

A person of ordinary skill in the art would understand that the connected computer 900 would run the tank control computer program and resulting features of the computer program. *See* Expert Decl. ¶48.

[1c] said computer integrated with a wide area network (WAN);

Kantronics discloses a number of network of devices communicating via packet radio and in communication with computer 900 over a packet radio connection, with computer 900 further connected to a WAN. Kantronics at p. 153-

54; Ultrix at p. 3 ("One advantage of TCP/IP … is that the user's computer becomes part of the network"). Kantronics discloses that the TNC "can work with any computer that can communicate with it through a standard RS-232C serial modem port" as illustrated below. Kantronics at pp. 16 and 19.

A person of ordinary skill in the art would understand that the computer 900, as part of a WAN, communicates information over the internet. *See* Expert Decl. ¶¶16-17.

[1d] at least one wireless transmitter configured to transmit select information and transmitter identification information;

Kantronics discloses that a user "can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing." Kantronics at p. 166. In this situation, the remote TNC 600 can "sense analog inputs" and "gather and report the status of one or two analog input lines in the remote TNC." Kantronics at p. 166. Further, the remote TNC 600 will "assemble a 'packet' of digital information for transmission." Kantronics at p. 21. This packet includes header "information indicating who the packet is from, who it is to, any relay stations needed to get to the destination and some control information." Kantronics at p. 101. Therefore, the remote TNC is a transmitter that transmits select information (*e.g.,* "report the status" and pressure sensor 300 data) and transmitter identification information (*e.g.,* "who the packet is from"). Kantronics at p. 166.

[1e] a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically at defined locations

Kantronics discloses a plurality of radio-frequency (RF) transceivers (*e.g.,* "stations") at different locations (dispersed geographically). Kantronics at p. 101. Specifically, a user "uses a computer software program to tell the TNC that he wants to establish a line of communication, called a "connection," with a "destination" station KBØNYK using an intermediate station NØGRG as a repeater station to carry the information beyond the range of the originating station and into the range of the destination station." Kantronics at p. 20. Additionally, a user "can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control" dispersed geographically at defined locations. Kantronics at p. 101.

Furthermore, each transceiver "generates, uses and can radiate radio frequency energy." Kantronics at p. 9. A person of ordinary skill in the art would further understand that the transceivers described in the packet radio system of Kantronics are relatively low-power radio-frequency (RF) transceivers for power conservation. *See* Expert Decl. ¶¶18-19.

[1f] configured to receive select information transmitted from at least one nearby wireless transmitter

Kantronics discloses that a packet may comprise select information (*e.g.,* "the message itself"). Kantronics at p. 21. Specifically, the TNC "uses the 'connection' information about where the message is to go and the path it is to take and combines this with the message itself to assemble a 'packet' of digital information for transmission from the transceiver." Kantronics at p. 21. Further, the transceivers (*e.g.,* "stations") are configured to receive select information (*e.g.,* "the message itself") in the form of packets transmitted from at least one nearby wireless transmitter. Kantronics at pp. 21-23. Specifically, "intermediate station NØGRG, an AX.25 packet radio station, is on the air, and is close enough to receive the radio burst sent by WØXI. It receives the burst of radio signals from WØXI." Kantronics at p. 23. Wherein, the radio burst carries the packet comprising the select information. *See* Expert Decl. ¶20.

[1g] and further configured to transmit the select information, the transmitter identification information and transceiver identification information;

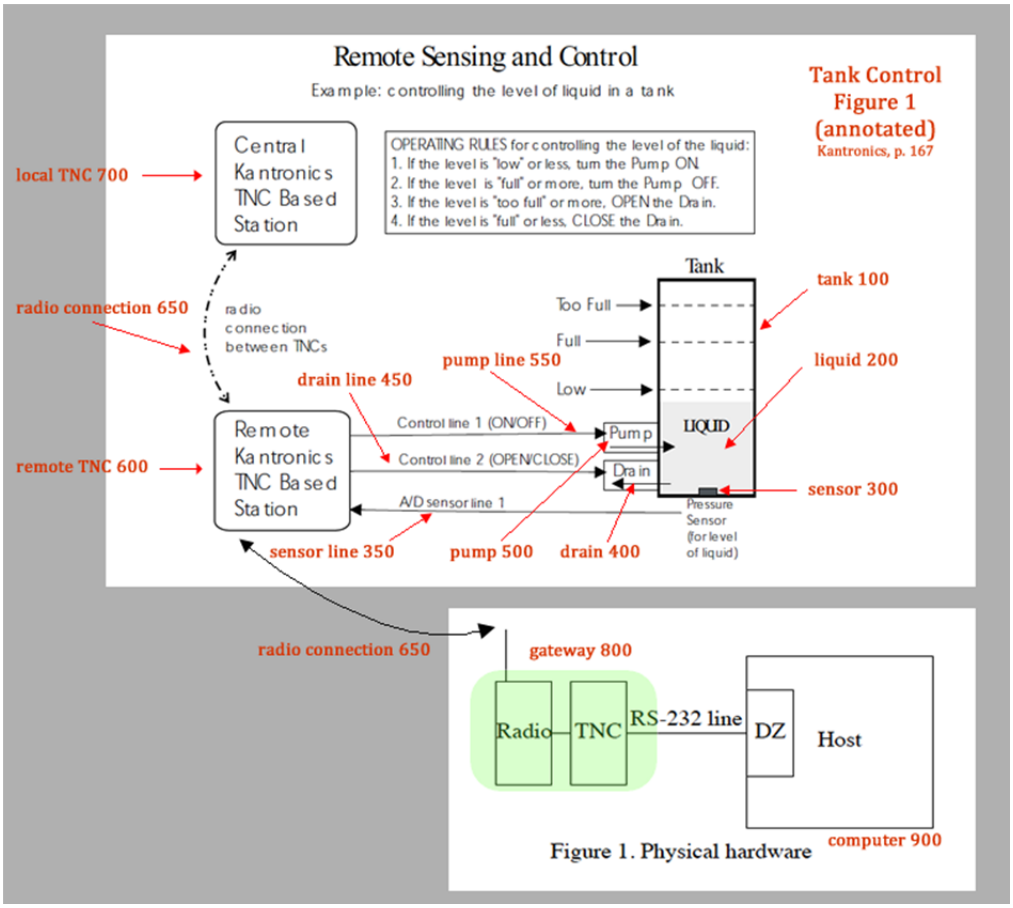
Kantronics discloses packets comprising "information indicating who the packet is from, who it is to, any relay stations needed to get to the destination and some control information." Kantronics at p. 101. Therefore, the packet includes select information (*e.g.,* "the message itself"), the transmitter identification information (*e.g.*, "information indicating who the packet is from") and transceiver

identification information (*e.g.,* "relay stations needed to get to the destination"). Kantronics at p. 101. Further, these packets are transmitted when "the operator of station WØXI turns on his computer, TNC (e.g., a KPC-3 Plus), and transceiver of his station and uses a computer software program to tell the TNC that he wants to establish a line of communication, called a 'connection,' with a 'destination' station KBØNYK using an intermediate station NØGRG as a repeater station to carry the information beyond the range of the originating station and into the range of the destination station." Kantronics at p. 20.

[1h] and at least one gateway connected to the wide area network configured to receive and translate the select information, the transmitter identification information, and transceiver identification information,

As above, the Kantronics TNC is one node among many in the packet radio network. Connection by computer 900 can be made with the packet radio network via gateway 800, as shown below.

Ultrix discloses "a gateway between users speaking other protocols over packet radio, and systems running IP." Ultrix at p. 2. The gateway 800 connects the computer 900 to the packet radio network, including local TNC 700 and remote TNC 600.



A person of ordinary skill in the art would understand that the connected computer 900 would run the tank control computer program and resulting features of the computer program. Expert Decl. ¶49. Further, the gateway 800 converts radio-based information (analog) into digital-based information. As shown illustrated in Figure 1, the "radio corresponds to an Ethernet transceiver, and the TNC to the Ethernet controller." Ultrix at pp. 2-3.

More specifically, the "TNC (Terminal Node Controller)" receives and translates (radio to digital conversion) the select information (*e.g.*, "the message itself"), the transmitter identification information (*e.g.*, "information indicating

who the packet is from") and transceiver identification information (*e.g.,* "who it is to") contained within the packet. Kantronics at p. 19. Further, the "TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa." Kantronics at p. 19.

[1i] said gateway further configured to further transmit the translated information to the computer over the WAN.

Ultrix discloses a gateway ("radio" and "TNC") that transmits translated information (packet information) to the computer. Ultrix at p. 2-3. For example, the packet "arrives at KBØNYK's TNC (e.g., a KPC-3 Plus), where it is processed and recognized as an AX.25 packet addressed to itself. Then KBØNYK's TNC sends the message, "HELLO," to the computer screen for KBØNYK to read." Kantronics at p. 23. A person of ordinary skill in the art would understand that the gateway 800 of Ultrix (comprised of the radio/TNC) operates as a gateway to other TNCs, such as at least remote TNC 600. The translated information (translated via "Ethernet driver") is delivered over the WAN because the computer, connected via RS-232 to the TNC, is interfaced to the existing Ultrix network. *See* Expert Decl. ¶¶15-17 and 49.

Claim 2

[2a] The system defined in claim 1, the computer program further comprising: a first segment for evaluating received information to identify an originating transmitter;

The AX.25 protocol provides an identification of an original transmitter associated with a packet. AX.25 at pp. 2 and 9. Specifically, "packet radio transmissions are sent in small blocks of data, called frames. Each frame is made up of several smaller groups, called fields" wherein the "address field is used to identify both the source of the frame and its destination." AX.25 Protocol at p. 2. *See* Expert Decl. ¶¶24-26 and 50.

The tank control program, running on the computer 900, is the recited computer program. Ultrix at p. 4 ("[d]ata can then be passed … to a separate program …."). Specifically, the tank control program would need to determine the identity of the TNC to determine the identity of tank associated with the received sensor signal. Therefore, a person of ordinary skill in the art would understand that the computer program includes a parsing mechanism for evaluating packetized information such that information received from an originating transmitter could be extracted. Once the various fields are extracted the information could be used in order to assemble and correctly catalog readings from the remote tank(s), for time-based review of tank operations. *See* Expert Decl. ¶¶24-26 and 50.

[2b] a second segment for evaluating the received information and identifying transceivers that relayed the select information from the originating transmitter to the gateway;

AX.25 Protocol discloses "an additional address subfield appended to the end of the address field. This additional subfield contains the call sign(s) of the repeater(s) to be used." AX.25 Protocol at p. 8. Therefore, the AX.25 Protocol provides a packet that includes a second segment of information that is evaluated by the tank control computer program to identify the stations that have relayed the select information from the originating transmitter through the gateway 800. *See* Expert Decl. ¶¶24-26 and 50.

[2c] a third segment for evaluating the select information transmitted from the originating transmitter embedded within the received information;

AX.25 packets contain select information in the "information field" which is used to "convey user data from one end of the link to the other." AX.25 Protocol at p. 3. One example of select information that may be provided in the "information field" of the packet is a response message to the ANALOG command utilized by the tank control program described above. Kantronics at p. 184. Specifically, the tank control program sends the command ANALOG. The response message is AN0/AN1/AN2/AN3/AN4/AN5/AN6/AN7. Kantronics at 184. Kantronics explains that only "the first two of these values are releant to the

user, reporting two external voltages." Kantronics at 184. As such, a person of ordinary skill in the art would understand that a programmer would use the tank control program to extract the useful data: AN0 and AN1. Therefore, a person of ordinary skill in the art would understand that the tank control program includes a parsing mechanism for evaluating packetized information such that information received from an originating transmitter could be extracted. Once the various fields are extracted the information could be used in order to assemble and correctly store and report this information. *See* Expert Decl. ¶¶24-26 and 50.

[2d] and a fourth segment responsive to the first, second, and third segments for determining an action to be taken based upon the select information, the identified originating transmitter, and the identified transceivers.

The tank control program would implement at least one of operating rules based upon the sensor reading, or do nothing. Kantronics at p. 167 (Rules #1-#4). A person of ordinary skill in the art would understand that, depending upon which rule was triggered by the pressure sensor reading, a CTRL command would be issued by the program in accordance with the particular tank control logic. Kantronics at 167, 199 ("activate the specified line output"). Therefore, the tank control computer program would include a fourth segment responsive to the first, second, and third segments for determining an action to be taken based upon the

select information, the identified originating transmitter, and the identified transceivers in order to function properly and perform the required command. *See* Expert Decl. ¶51.

Claim 3

[3] The system as defined in claim 1, wherein each wireless transmitter is configured to transmit a relatively low-power radio-frequency (RF) signal.

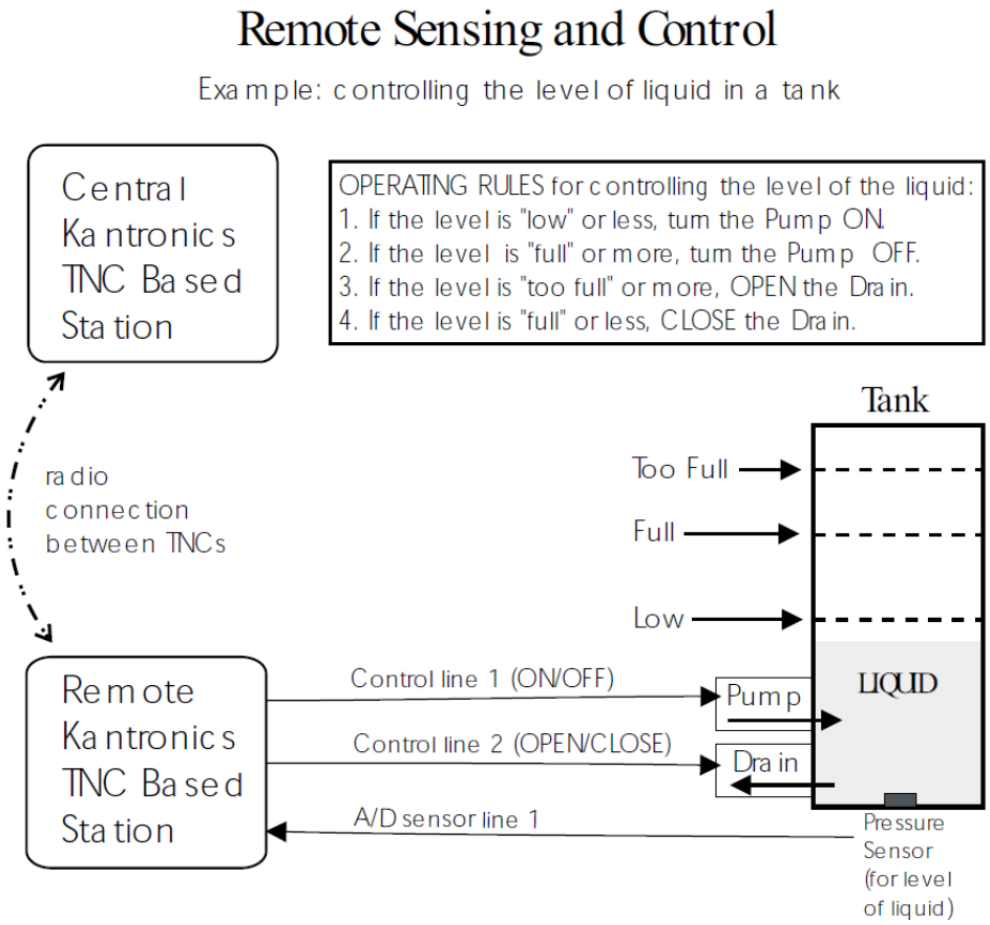
Kantronics discloses that each transmitter "generates, uses and can radiate radio frequency energy." Kantronics at p. 9. A person of ordinary skill in the art would understand that transmitters vary in the power output of their signals, and that the packet radio system of Kantronics includes, on a relative basis, low-power radio-frequency (RF) transceivers. *See* Expert Decl. ¶¶18-19.

Claim 4

[4] The system as defined in claim 1, wherein each wireless transmitter is integrated with a sensor.

Kantronics discloses that each wireless transmitter may be connected to a sensor for remote sensing and control. Kantronics at p. 166, 167 (figure showing tank "pressure sensor" connected to remote station via A/D sensor line 1). Specifically, a user "can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics at p. 166. Kantronics discloses how remote control and sensing "operations could

be carried out manually or via a terminal program running in the computer in the central TNC station." Kantronics at p. 167.



Kantronics at p. 167.

Claim 5

[5] The system as defined in claim 1, wherein the RF signal transmitted by the transceiver contains a concatenation of information comprising select information and transmitter identification information from the originating transmitter and transceiver identification information for each transceiver that receives and repeats the RF signal.

Kantronics discloses that a

> packet is a group of characters with a flag and header at the beginning and a checksum and flag at the end. A flag is a specific character used to signify the beginning and ending of a packet. The header is information indicating who the packet is from, who it is to, any relay stations needed to get to the destination and some control information. A checksum is a complicated mathematical formula that produces a number based on the combination of characters that are in the packet.

Kantronics at p. 101. Therefore, a person of ordinary skill in the art would understand that the packets described in Kantronics may be considered a concatenation of information comprising select information and transmitter identification information from the originating transmitter and transceiver identification information for each transceiver that receives and repeats the RF signal.

Claim 6

[6] The system as defined in claim 5, wherein the at least one transmitter is replaced by a transceiver, the transceiver further integrated with an actuator.

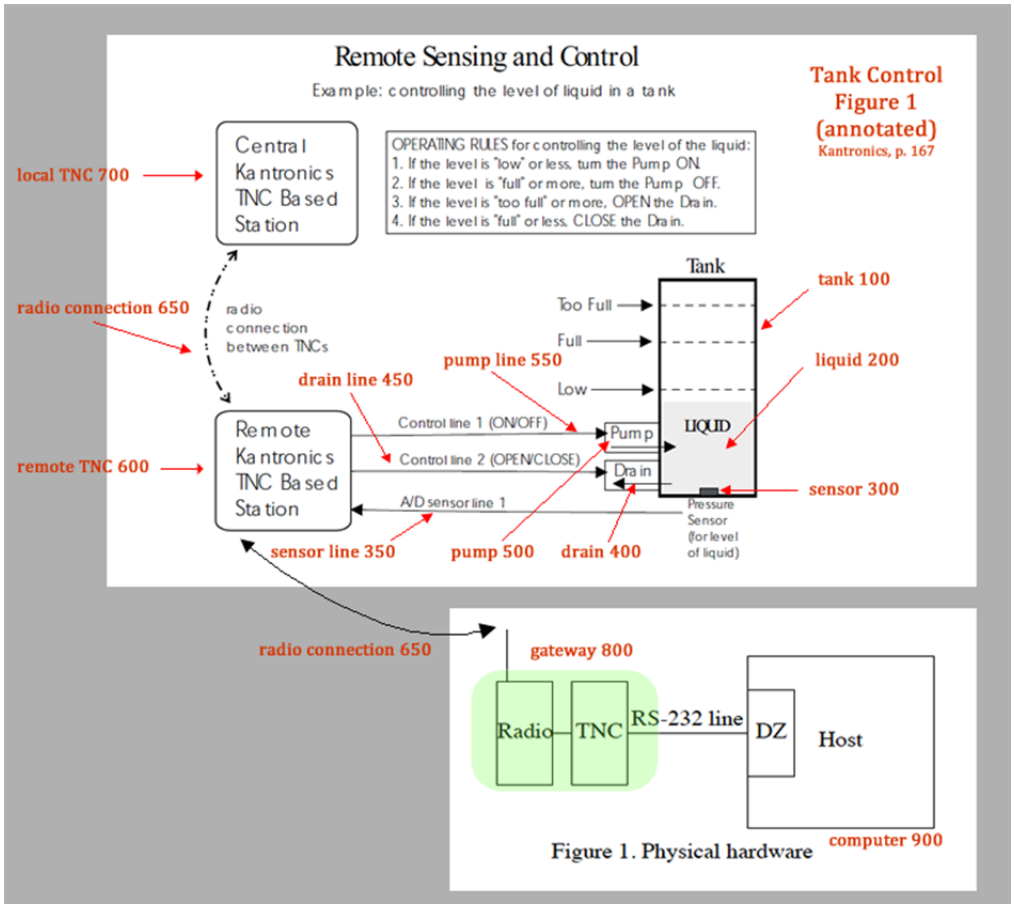
Kantronics discloses that a TNC station, that includes a transceiver, can be connected to an actuator for remote control as illustrated above by "controlling the level of liquid in a tank." Kantronics at pp. 166-167. Specifically, the user may "use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices)." Kantronics at p. 167. A person of ordinary skill in the art

would understand that Kantronics discloses the use of a transceiver and control lines to vary output voltages to the drain and pump of a tank to control the level of liquid in the tank. The collective operations of control commands by the transceiver, and delivered to the pump and drain devices, constitutes the integration of the transceiver with actuator devices such as a drain or pump. *See* Expert Decl. ¶29.

Claim 7

[7] The system as defined in claim 6, wherein the transceivers are configured to communicate with the gateway via a RF signal.

Kantronics discloses that the transceivers (*e.g.,* "Remote Kantronics TNC Based Station") are configured to communicate with a gateway 800 (*e.g.,* "radio" and "TNC") via a RF signal as illustrated in the figure below (i.e. radio connection to remote TNC 600). Ultrix discloses "a gateway between users speaking other protocols over packet radio, and systems running IP." Ultrix at p. 2. The gateway 800 connects the computer 900 to the packet radio network, including local TNC 700 and remote TNC 600.

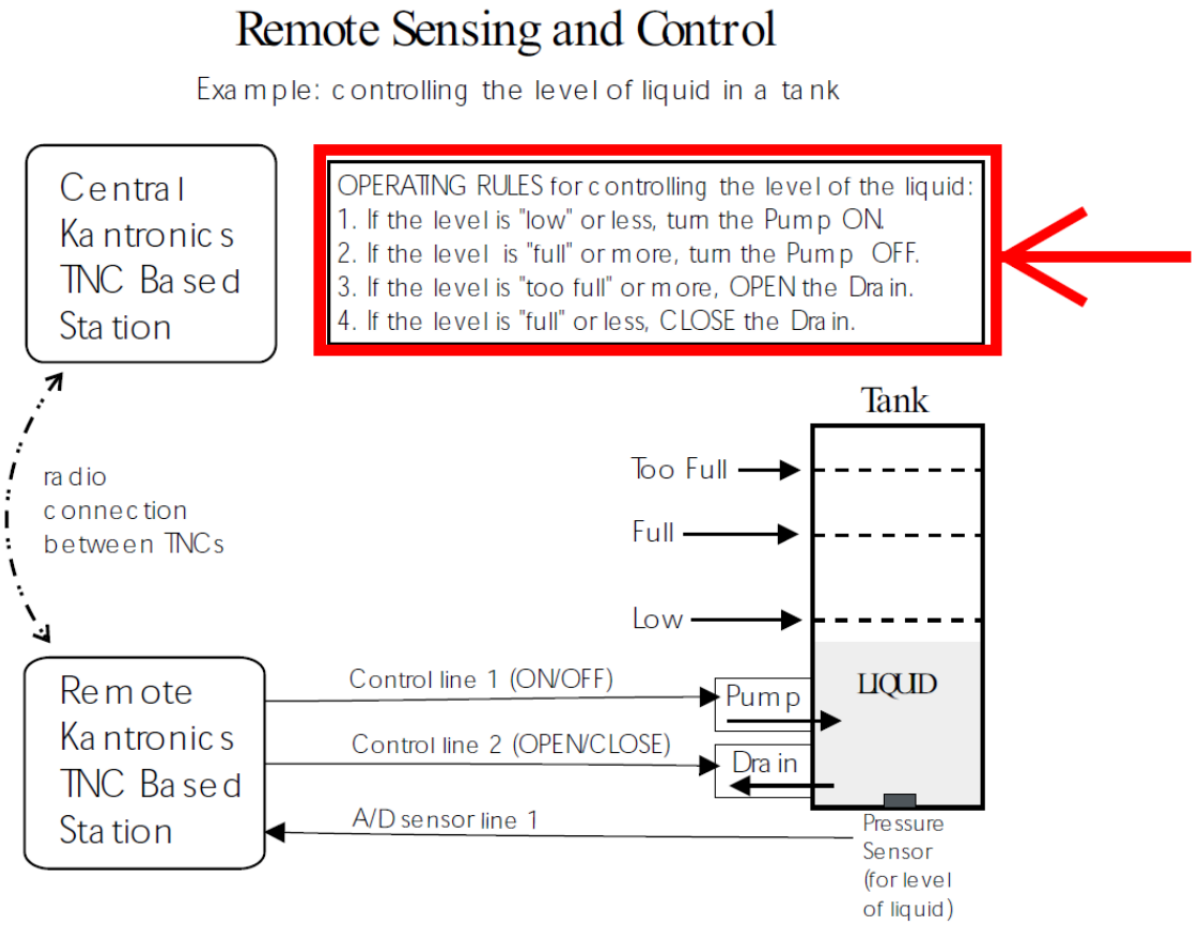


Claim 8

[8] The system as defined in claim 7, wherein the computer is further configured to respond to received select information by communicating a control signal to at least one transceiver, wherein the actuator integrated with the transceiver is responsive to the control signal.

Kantronics discloses that the computer may receive tank sensor information (received select information) and also send a CTRL command (control signal) to the remote TNC station to be delivered to the connected pump or drain. Kantronics at p. 167, 199. Specifically, when controlling the level of liquid in a tank,

operating rules may be implemented by the computer via the tank control program which respond to received select information such as the liquid level (i.e. low, full, or too full) by communicating a control signal (i.e. Pump ON, Pump OFF, OPEN the Drain, or CLOSE the Drain) to the transceiver (*e.g.,* "Remote Kantronics TNC Based Station"). Kantronics at p. 167.



Kantronics at p. 167.

Therefore, a person of ordinary skill in the art would recognize that a computer program can configured to use the various Kantronics commands to perform sensing and control commands as illustrated. *See* Expert Decl. ¶30.

Claim 9

[9] The system as defined in claim 8, wherein select transceivers further include a microphone, a speaker, and means for communicating two-way voice information to the WAN via the transceivers.

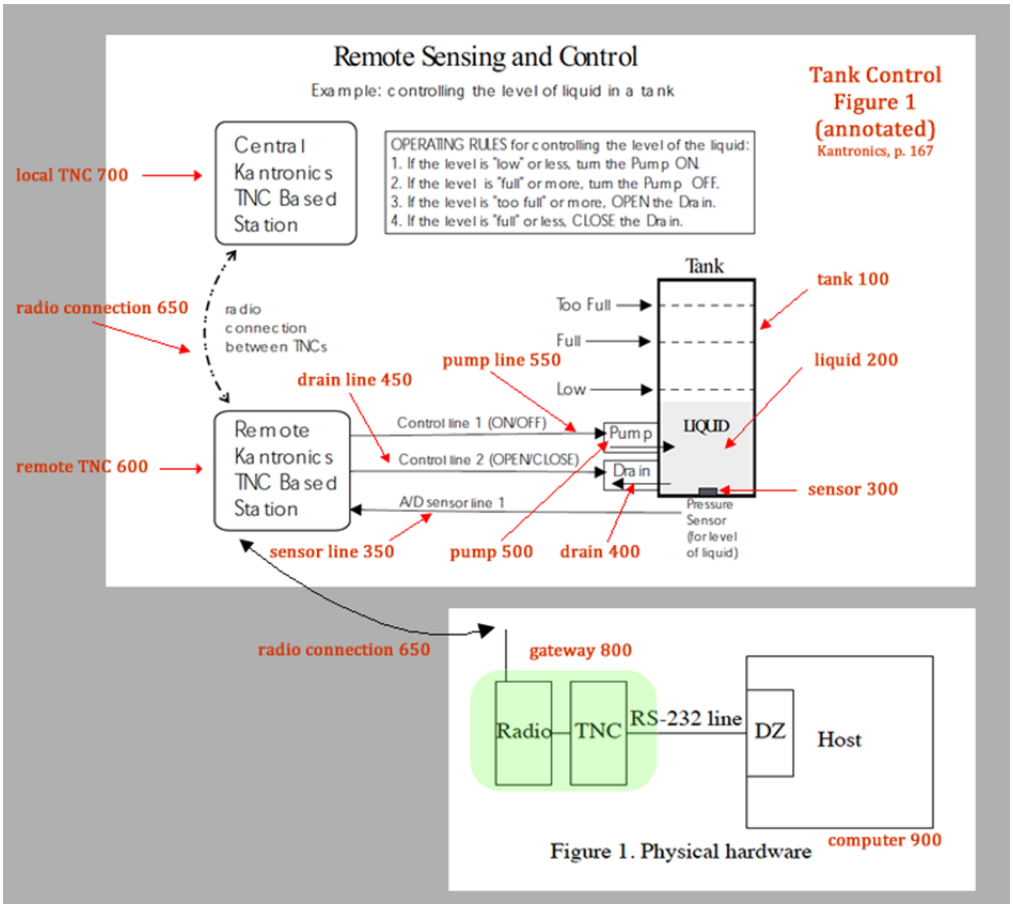
Kantronics discloses a "cable assembly connecting your KPC-3 Plus to both the speaker jack and the microphone of your transceiver" as well as using "a standard "voice" repeater." Kantronics at pp. 37 and 187. A person of ordinary skill in the art would understand that the disclosed "standard 'voice' repeater" could be used for communicating two-way voice information to a computer connected to a WAN, via transceivers. *See* Expert Decl. ¶¶31-32.

Claim 10

[10] The system as defined in claim 1, wherein the gateway is permanently connected to the WAN.

Kantronics discloses the system as defined in claim 1. See above.

As discussed above, Kantronics discloses that the TNC "can work with any computer that can communicate with it through a standard RS-232C serial modem port" as illustrated below. Kantronics at pp. 16 and 19.



A person of ordinary skill in the art would understand that because the TNC "can work with any computer," and because computers are well understood to be connected to a WAN using ordinary network hardware and software, that the packet radio network may be integrated with the WAN via a computer (the recited gateway). Ultrix at p. 2; *see also* Expert Decl. ¶46. Further, a person of ordinary skill in the art would understand that a computer could be connected to a WAN for an indefinite period of time. *See* Expert Decl. ¶33.

Claim 11

[11] The system as defined in claim 1, wherein the gateway includes one selected from the group consisting of: a modem for establishing a dial-up connection with a remote computer; a network card for communicating across a local area network; a network card for communicating across the WAN; a DSL modem; and an ISDN card to permit backup access to the computer.

Kantronics discloses that the TNC "can work with any computer that can communicate with it through a standard RS-232C serial modem port" as described above. Kantronics at pp. 16 and 19. Further, a person of ordinary skill in the art would understand that there are a variety of interfaces for a "computer" to connect to other computers. Ultrix discloses IP-based connectivity. Ultrix at 2. Well-known methods of computer to computer connectivity for IP-based connectivity include a LAN or WAN network card a DSL modem, or an ISDN card. *See* Expert Decl. ¶¶34-35.

Claim 12

[12] The system as defined in claim 1, wherein the gateway translates the select information, the transmitter identification, and the transceiver identification information into TCP/IP for communication over the WAN.

Ultrix discloses "providing a gateway between the packet radio network and the rest of the Internet." Ultrix at p.4. A TCP/IP packet can contain any

information that the gateway chooses to encapsulate within it. All of the select information, transmitter identification, and transceiver identification are presented to the general purpose computer via the gateway. A person of ordinary skill in the art would recognize that this information could be relayed over the WAN as the payload of the TCP/IP communication. *See* Expert Decl. ¶¶36-37.

Claim 13

[13] The system as defined in claim 1, wherein the WAN is the Internet.

Ultrix discloses that the WAN may be the Internet. Ultrix at p. 4 ("the packet radio interface was enabled at the Internet address of 44.24.0.28").

Claim 14

[14] The system as defined in claim 1, wherein the WAN is a dedicated Intranet.

As discussed above, it would be obvious to a person of ordinary skill in the art to connect the "Computer" to a WAN. Ultrix at 2, 4. Further, a person of ordinary skill in the art would understand that the WAN could be a dedicated Intranet because this is technologically the same as using the Internet. *See* Expert Decl. ¶38.

Claim 15

[15a] The system as defined in claim 2, further including a first lookup table that is utilized by the first segment,

Kantronics discloses a "software design incorporating the AX.25 Level 2 Version 2 Packet protocol" as described above. Kantronics at copyright page. Also, as described above, the AX.25 protocol identifies an original transmitter. AX.25 Protocol at pp. 2, 9. Specifically, "packet radio transmissions are sent in small blocks of data, called frames. Each frame is made up of several smaller groups, called fields" wherein the "address field is used to identify both the source of the frame and its destination." AX.25 Protocol at p. 2.

As above, Kantronics discloses a tank control computer program. Kantronics at p. 167. Kantronics further discloses, in connection with the logic supporting a tank control program, the suggestion "to adapt these broad capacities to your own situation, with your own sensors, controls, **and remote locations.**" Kantronics at p. 167 (emphasis added). A person of ordinary skill in the art would understand that multiple sensors and multiple locations necessitate a need to track the performance of different tanks using the tank control computer program. One well known way to manage such data is to use a database. It is further well known that a database can include tables of data for retrieval, storage and lookup. Therefore, a person of ordinary skill in the art would have understood that the tank control computer program, that has a first segment for extracting data from messages, would further include a lookup table to determine and store information corresponding to an originating transmitter. *See* Expert Decl. ¶¶39-41.

[15b] wherein the first lookup table is configured to associate a plurality of unique transmitter identification numbers with a plurality of unique transmitter identifiers,

Kantronics discloses remotely sensing and controlling a tank, or multiple tanks, of liquid as discussed above. Kantronics at p. 167. Because Kantronics expressly discloses multiple "remote locations," the system of Kantronics would be understood to include more than one tank of liquid. Kantronics at p. 167. A person of ordinary skill in the art would have understood how to associate each tank with a unique identifier that would be associated with the unique transmitter identification number of the corresponding attached transmitter for purposes of organizing the performance characteristics and operations of multiple tanks. *See* Expert Decl. ¶¶39-41 and 52.

[15c] wherein each transmitter identification number is uniquely associated with a unique transmitter identifier.

Kantronics discloses remotely sensing and controlling a tank of liquid as discussed above. Kantronics at p. 167. Because the system of Kantronics was understood to include more than one tank of liquid, a person of ordinary skill in the art would utilize a process such that each tank would be associated with a unique identifier to differentiate one tank remote location from another tank remote location. By differentiating the tanks in this common and well understood manner,

each remote tank would be associated with a unique transmitter identification number for the corresponding attached transmitter. *See* Expert Decl. ¶¶39-41 and 52.

Claim 16

[16a] The system as defined in claim 15, further including a second lookup table that is utilized by the second segment,

AX.25 Protocol discloses "an additional address subfield appended to the end of the address field. This additional subfield contains the call sign(s) of the repeater(s) to be used." AX.25 Protocol at p. 8. Therefore, it would be obvious to a person of ordinary skill in the art that the AX.25 Protocol comprises a second segment for evaluating the received information and identifying the stations that relayed the select information from the originating transmitter to the gateway. Furthermore, a person of ordinary skill in the art would have understood that the tank control computer program includes multiple segments for parsing AX.25 messages. Each item of data parsed by the different segments of the tank control program would reside in a database, with the database including tables of such data. *See* Expert Decl. ¶¶39-41 and 53.

[16b] wherein the second lookup table is configured to associate a plurality of unique transceiver identification numbers with a plurality of unique geographic locations,

Kantronics discloses remotely sensing and controlling a tank of liquid as discussed above. Kantronics at p. 167. Kantronics further discloses the use of GPS for "determining location information for more serious applications." Kantronics at p. 136-37. Kantronics describes that "[e]ach TNC, in GPS mode, would be set to beacon location periodically." Because the system of Kantronics could be expanded to include more than one tank of liquid, a person of ordinary skill in the art would understand to associate each tank with a unique identifier corresponding to the tank location, determined by GPS, that would be associated with the unique transceiver identification number of the corresponding attached transceiver. Because the associated GPS data would be linked to a transceiver identification number, this linked data would be stored in the database used by the tank control program. *See* Expert Decl. ¶¶39-41 and 53.

[16c] wherein each transceiver identification number is uniquely associated with a unique geographic location.

Kantronics discloses remotely sensing and controlling a tank of liquid as discussed above. Kantronics at p. 167. Because the system of Kantronics could be expanded to include more than one tank of liquid, a person of ordinary skill in the art would understand how to associate each tank with a unique identifier corresponding to the tank location that would be associated with the unique

transceiver identification number of the corresponding attached transceiver. *See* Expert Decl. ¶¶39-41 and 53.

Claim 17

[17a] The system as defined in claim 16, further including a third lookup table that is utilized by the third segment,

AX.25 packets contain select information in the "information field" which is used to "convey user data from one end of the link to the other." AX.25 Protocol at p. 3. Furthermore, a person of ordinary skill in the art would have understood that the tank control computer program includes multiple segments for parsing AX.25 messages. Each item of data parsed by the different segments of the tank control program would reside in a database, with the database including tables of such data. *See* Expert Decl. ¶¶42 and 53.

[17b] wherein the first lookup table is configured to associate a plurality of unique transmitter codes with a plurality of unique information fields associated with the transmitter codes,

Kantronics discloses remotely sensing and controlling a tank of liquid as discussed above. Kantronics at p. 167. A person of ordinary skill in the art would have understood that the tank control computer program receives periodic data from different tanks that includes transmitter codes and sensor readings for each tank, and tank level macro data associated with the sensor values (i.e. low, full, or

too full). A person of ordinary skill in the art would have understood how to relate discrete readings of a tank and approximation liquid levels (low, full, etc.) to relate the readings as additional information fields associated with the transmitter code corresponding to the attached transmitter. *See* Expert Decl. ¶¶42 and 53.

[17c] wherein each transmitter code is uniquely associated with a unique information field.

Kantronics discloses remotely sensing and controlling a tank of liquid as discussed above. Kantronics at p. 167. As above, a person of ordinary skill in the art understood how to use the tank control computer program, and related database, to associate each tank level (i.e. low, full, or too full) with a unique information field associated with the transmitter code corresponding to the attached transmitter. *See* Expert Decl. ¶¶42 and 53.

Claims 18-64

Claims 18 - 64	**Prior Art Disclosure**
Claim 18	
[18a] A method for collecting information and providing data services comprising:	*See* [1a] analysis above.
[18b] adaptively configuring at least one transmitter with a sensor wherein the transmitter generates an information signal consisting of a transmitter identification	*See* [1d], [4], and [5] analysis above.

code and an information field;	
[18c] placing a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically	*See* [1e] analysis above.
[18d] wherein the information signal is received and repeated as required to communicate the information signal to a gateway,	*See* [1h] and [5] analysis above.
[18e] the gateway providing access to a WAN;	*See* [1i] analysis above.
[18f] translating the information signal within the gateway into a WAN compatible data transfer protocol;	*See* [1h] and [1i] analysis above.
[18g] transferring the information signal via the WAN to a computer wherein the computer is configured to manipulate and store data provided in the information signal;	*See* [1b], [1c], and [1i] analysis above.
[18h] and granting client access to the computer.	*See* [1b] analysis above.
Claim 19	
[19] The method of claim 18, wherein the WAN is the Internet.	*See* [13] analysis above.
Claim 20	
[20] The method of claim 18, wherein the WAN is an Intranet.	*See* [14] analysis above.
Claim 21	

[21] The method of claim 18, wherein the computer is configured to provide the information in hypertext mark-up language (HTML).	*See* Expert Decl. ¶¶43-44.
Claim 22	
[22] The method of claim 18, wherein clients access the information using a web browser.	*See* Expert Decl. ¶45.
Claim 23	
[23] The method of claim 18, wherein the step of adaptively configuring at least one transmitter is modified to replace the sensor with a global positioning system receiver.	Kantronics teaches that "[m]ost Kantronics TNCs, e.g. KPC-3 Plus, KPC-9612 Plus, KAM Plus, and others, support the GPS mode…" Kantronics at p. 136. GPS information is provided by a "GPS unit with an NMEA interface" to the TNC, the information includes "latitude, longitude, altitude, and time…." Kantronics at p. 136-138.
Claim 24	
[24a] A method for controlling a system comprising:	*See* [1a] analysis above.
[24b] remotely collecting data from at least one sensor;	*See* [4] and [1d] analysis above.
[24c] processing the data into a radio-frequency (RF) signal;	*See* [1e] and [3] analysis above.
[24d] transmitting the RF signal, via a relatively low-power RF transceiver,	*See* [1e], [1g], and [1h] analysis above.

to a gateway;	
[24e] translating the data in the RF signal into a network transfer protocol;	*See* [1h], [1i], and [12] analysis above.
[24f] sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by the at least one sensor by generating an appropriate control signal;	*See* [1b] and [8] analysis above.
[24g] sending the control signal via the network to the gateway;	*See* [1h], [1i], [2b] and [7] analysis above.
[24h] translating the control signal from a network transfer protocol into a RF control signal;	*See* [1h], [1i] and [12] analysis above.
[24i] transmitting the RF control signal;	*See* [8] analysis above.
[24j] receiving the RF control signal;	*See* [8] analysis above.
[24k] translating the received RF control signal into an analog signal;	Using the "CTRL command" Kantronics allows a remote TNC to control output voltages (analog signal) that, for example, turn the pump shown above from page 167 of Kantronics on or off. Kantronics at pp. 166-167. Accordingly, the control signal sent from the "Central Kantronics TNC Based Station" over the "radio connection" is translated from a radio signal to

	an analog voltage.
[24l] and applying the analog signal to an actuator to effect the desired system response.	Kantronics discloses applying an analog signal (i.e. 5 volts or 0 volts) to change the level of liquid in the tank. Kantronics at pp. 166-167.
Claim 25	
[25] The method of claim 24, wherein the RF signal contains a concatenation of information comprising encoded data information and transmitter identification information from an originating transmitter.	*See* [5] analysis above.
Claim 26	
[26] The method of claim 25, wherein the step of transmitting the RF signal is further performed by at least one transceiver, wherein the transceiver is configured to concatenate a transceiver identification code to the RF signal.	*See* [1g], [3], and [5] analysis above.
Claim 27	
[27] The method of claim 25, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	*See* [1g], [3], and [5] analysis above.
Claim 28	

[28] The method of claim 25, wherein the steps of translating and applying the received RF control signal are performed only by an identified transceiver electrically integrated with an actuator.	*See* [6] analysis above.
Claim 29	
[29] The method of claim 25, wherein the network is the Internet.	*See* [13] analysis above.
Claim 30	
[30] The method of claim 25, wherein the network is an Intranet.	*See* [14] analysis above.
Claim 31	
[31] The method of claim 25, wherein the network transfer protocol is TCP/IP.	*See* [12] analysis above.
Claim 32	
[32a] A system for monitoring remote devices comprising:	*See* [1a] analysis above.
[32b] at least one sensor adapted to generate an electrical signal in response to a physical condition;	*See* [4] analysis above.
[32c] at least one wireless transmitter configured to encode the electrical signal,	*See* [1d] analysis above.
[32d] the wireless transmitter further configured to transmit the encoded electrical signal	*See* [1e] and [3] analysis above.

and transmitter identification information in a low-power radio-frequency (RF) signal;	
[32e] at least one gateway connected a wide area network (WAN) configured to receive and translate the RF signal,	*See* [1h] analysis above.
[32f] the gateway further configured to deliver the encoded electrical signal and transmitter identification information to a computer on the WAN;	*See* [1i] analysis above.
[32g] and a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.	*See* [1b] analysis above.
Claim 33	
[33a] The system defined in claim 32, the at least one computer program further comprising:	*See* [1a], [1b], and [2a] analysis above.
[33b] a first segment for evaluating received information to identify an originating transmitter;	*See* [2a] analysis above.
[33c] a second segment for evaluating the received information and identifying transceivers that relayed the select	*See* [2b] analysis above.

information from the originating transmitter to the gateway;	
[33d] a third segment for evaluating the select information transmitted from the originating transmitter embedded within the received information;	*See* [2c] analysis above.
[33e] and a fourth segment responsive to the first, second, and third segments for determining an action to be taken based upon the select information, the identified originating transmitter, and the identified transceivers.	*See* [2d] analysis above.
Claim 34	
[34] The system as defined in claim 32, wherein each wireless transmitter is configured to transmit a relatively low-power radio-frequency (RF) signal.	*See* [1e], [1g], [1h], and [3] analysis above.
Claim 35	
[35] The system as defined in claim 32, wherein the at least one gateway is permanently connected to the WAN.	*See* [10] analysis above.
Claim 36	
[36] The system as defined in claim 32, wherein the gateway translates the encoded electrical signal, the transmitter	*See* [12] analysis above.

identification, and the transceiver identification information into TCP/IP for communication over the WAN.	
Claim 37	
[37] The system as defined in claim 32, wherein the WAN is the Internet.	*See* [13] analysis above.
Claim 38	
[38] The system as defined in claim 32, wherein the WAN is a dedicated Intranet.	*See* [14] analysis above.
Claim 39	
[39a] The system as defined in claim 33, further including a first lookup table that is utilized by the first segment,	*See* [15a] analysis above.
[39b] wherein the first lookup table is configured to associate a plurality of unique transmitter identification numbers with a plurality of unique transmitter identifiers,	*See* [15b] analysis above.
[39c] wherein each transmitter identification number is uniquely associated with a unique transmitter identifier.	*See* [15c] analysis above.
Claim 40	
[40a] The system as defined in claim 39, further including a second lookup table that is utilized by the second	*See* [16a] analysis above.

segment,	
[40b] wherein the second lookup table is configured to associate a plurality of unique transceiver identification numbers with a plurality of unique geographic locations,	*See* [16b] analysis above.
[40c] wherein each transceiver identification number is uniquely associated with a unique geographic location.	*See* [16c] analysis above.
Claim 41	
[41a] The system as defined in claim 40, further including a third lookup table that is utilized by the third segment,	*See* [17a] analysis above.
[41b] wherein the first lookup table is configured to associate a plurality of unique transmitter codes with a plurality of unique information fields associated with the transmitter codes,	*See* [17b] analysis above.
[41c] wherein each transmitter code is uniquely associated with a unique information field.	*See* [17c] analysis above.
Claim 42	
[42a] A system for controlling remote devices comprising:	*See* [1a], [4], [24k], and [24l] analysis above.
[42b] a computer configured to execute at least one computer	*See* [1b], [8], [24k], and [24l] analysis above.

program that generates at least one control signal responsive to a system input signal;	
[42c] said computer integrated with a wide area network (WAN);	*See* [1c] analysis above.
[42d] at least one gateway connected to the WAN configured to receive and translate the at least one control signal;	*See* [1h] analysis above.
[42e] said gateway further configured to transmit a radio-frequency (RF) signal containing the control signal and destination information;	*See* [1i] and [8] analysis above.
[42f] at least one wireless low-power RF transceiver configured to receive the RF signal from the gateway;	*See* [1e], [1f], [1g], and [3] analysis above.
[42g] said wireless transceiver configured to translate the RF signal to an analog output signal,	*See* [24k] and [24l] analysis above.
[42h] the wireless transceiver electrically coupled with an actuator;	*See* [6] analysis above.
[42i] and an actuator configured to receive the analog output signal from the wireless transceiver,	*See* [6], [24k], and [24l] analysis above.
[42j] the actuator further configured to translate the analog output signal into a response.	*See* [24k] and [24l] analysis above.
Claim 43	

[43a] The system defined in claim 42, the system input signal comprising: a concatenation of information including data from a sensor, transceiver identification information from the originating transceiver,	*See* [4] and [5] analysis above.
[43b] and transceiver identification information for each transceiver that receives and repeats the RF signal.	*See* [4] and [5] analysis above.
Claim 44	
[44a] The system defined in claim 42, at least one computer program further comprising: a first segment for evaluating a system input signal to identify an originating transceiver;	*See* [2a] analysis above.
[44b] a second segment for evaluating the system input signal and identifying transceivers that relayed the system input from the originating transceiver to the gateway;	*See* [2b] analysis above.
[44c] a third segment for evaluating the system input signal transmitted from the originating transceiver;	*See* [2c] analysis above.
[44d] and a fourth segment responsive to the first, second, and third segments for determining an action to be taken based upon the	*See* [2d] analysis above.

data from a sensor, the identified originating transceiver, and the identified transceivers.	
Claim 45	
[45] The system as defined in claim 42, wherein the at least one gateway is permanently connected to the WAN.	*See* [10] analysis above.
Claim 46	
[46] The system as defined in claim 42, wherein the gateway translates the RF signal and the RF control signal into TCP/IP for communication over the WAN.	*See* [12] analysis above.
Claim 47	
[47] The system as defined in claim 42, wherein the WAN is the Internet.	*See* [13] analysis above.
Claim 48	
[48] The system as defined in claim 42, wherein the WAN is a dedicated Intranet.	*See* [14] analysis above.
Claim 49	
[49a] A system for managing an arrangement of application specific remote devices comprising:	*See* [1a] analysis above.
[49b] a computer configured to execute a multiplicity of computer programs, each computer program executed to generate at least one	*See* [1b], [8], [24k], and [24l] analysis above.

control signal in response to at least one application system input,	
[49c] said computer integrated with a wide area network (WAN);	*See* [1c] analysis above.
[49d] at least one gateway connected to the WAN configured as a two-way communication device to receive and translate the at least one control signal and the at least one application system input;	*See* [1h] and [1i] analysis above.
[49e] said gateway further configured to translate and transmit a radio-frequency (RF) signal containing the control signal and destination information,	*See* [1i] and [8] analysis above.
[49f] said gateway further configured to receive and translate the at least one application system input and source information;	*See* [1h] analysis above.
[49g] at least one wireless relatively low-power RF transceiver per computer program configured to receive the RF signal from the gateway;	*See* [1e], [1f], [1g], and [3] analysis above.
[49h] said wireless transceiver configured to translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator and a sensor;	*See* [4], [6], [24k] and [24l] analysis above.
[49i] an actuator	*See* [6], [24k], and [24l] analysis above.

configured to receive the analog output signal from the wireless transceiver, the actuator further configured to translate the analog output signal into a response;	
[49j] and a sensor configured to translate a physical condition into an analog version of the application system input.	*See* [4], [24k], and [24l] analysis above.
Claim 50	
[50] The system as defined in claim 49, wherein the at least one gateway is permanently connected to the WAN.	*See* [10] analysis above.
Claim 51	
[51] The system as defined in claim 49, wherein the at least one gateway translates the RF signal and the RF control signal into TCP/IP for communication over the WAN.	*See* [12] analysis above.
Claim 52	
[52] The system as defined in claim 49, wherein the WAN is the Internet.	*See* [13] analysis above.
Claim 53	
[53] The system as defined in claim 49, wherein the WAN is a dedicated Intranet.	*See* [14] analysis above.
Claim 54	
[54] The system as defined in claim 49, wherein the at	*See* [11] analysis above.

least one gateway is connected to the WAN by a network selected from the group consisting of a telecommunications network, private radio-frequency network, and a computer network.	
Claim 55	
[55a] A method for collecting information and providing data services comprising:	*See* [1a] analysis above.
[55b] adaptively configuring a data translator at the output of a local controller,	*See* [1f] and [1g] analysis above.
[55c] wherein the data translator converts the output data stream into an information signal consisting of a transmitter code and an information field;	*See* [1f] and [1g] analysis above.
[55d] adaptively configuring at least one transmitter with the data translator, wherein the transmitter converts the information signal into a low-power RF signal;	*See* [1d] and [1e] analysis above.
[55e] placing a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically wherein the low-power RF signal is received and repeated as required to communicate the information signal to a	*See* [1e] and [5] analysis above.

gateway,	
[55f] the gateway providing access to a WAN;	*See* [1c] and [1i] analysis above.
[55g] translating the low-power RF signal within the gateway into a WAN compatible data transfer protocol;	*See* [1h] and [1i] analysis above.
[55h] transferring the translated low-power RF signal via the WAN to a computer wherein the computer is configured to manipulate and store data provided in said signal;	*See* [1b], [1c], and [1i] analysis above.
[55i] and granting client access to the computer.	*See* [18h] analysis above.
Claim 56	
[56] The method of claim 55, wherein the WAN is the Internet.	*See* [13] analysis above.
Claim 57	
[57] The method of claim 55, wherein the WAN is an Intranet.	*See* [14] analysis above.
Claim 58	
[58] The method of claim 55, wherein the computer is configured to provide the information in hypertext mark-up language (HTML).	*See* [21] analysis above.
Claim 59	
[59] The method of claim 55, wherein clients access the information using a web browser.	*See* [22] analysis above.
Claim 60	

[60a] A method for controlling an existing control system with a local controller comprising:	*See* [1a] analysis above.
[60b] adaptively configuring a data translator disposed between and in communication with both a local controller and a wireless transceiver,	*See* [1f] and [1g] analysis above.
[60c] wherein the data translator is configured to translate the local controller data stream into an information signal consisting of a transceiver identification code and a concatenation of function codes,	*See* [5] analysis above.
[60d] the data translator further configured to translate control signals from the wireless transceiver into local controller recognized control signals;	*See* [1b] and [8] analysis above.
[60e] remotely collecting data from at least one relatively low-power radio-frequency (RF) transceiver integrated with the data translator;	*See* [4] analysis above.
[60f] processing the data into a RF signal;	*See* [1d] and [1e] analysis above.
[60g] transmitting the RF signal to a gateway;	*See* [1d], [1e], and [1h] analysis above.
[60h] translating the data in the RF signal into a	*See* [1h], [1i], and [12] analysis above.

network transfer protocol;	
[60i] sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by at least one sensor by generating an appropriate control signal;	*See* [1b] and [8] analysis above.
[60j] sending the control signal via the network to the gateway;	*See* [1h], [1i], [2b] and [7] analysis above.
[60k] translating the control signal from a network transfer protocol into a RF control signal;	*See* [1h], [1i] and [12] analysis above.
[60l] transmitting the RF control signal;	*See* [8] analysis above.
[60m] receiving the RF control signal;	*See* [8] analysis above.
[60n] translating the received RF control signal into a local controller recognized control signal;	*See* [24k] and [24l] analysis above.
[60o] and applying the local controller recognized control signal via a local controller to effect the desired system response.	*See* [24k] and [24l] analysis above.
Claim 61	
[61] The method of claim 60, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control	*See* [1g], [3], and [5] analysis above.

signal.	
Claim 62	
[62] The method of claim 60, wherein the network is the Internet.	*See* [13] analysis above.
Claim 63	
[63] The method of claim 60, wherein the network is an Intranet.	*See* [14] analysis above.
Claim 64	
[64] The method of claim 60, wherein the network transfer protocol is TCP/IP.	*See* [12] analysis above.

V. CONCLUSION

For the foregoing reasons, Petitioner respectfully requests that the *inter partes* review of the '692 patent be instituted as the Petition establishes a reasonable likelihood of prevailing with respect to the challenged claims. Petitioner further respectfully requests that Claims 1-64 be cancelled as unpatentable under 35 U.S.C. § 318(b).

Dated: February 2, 2015

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the Petition together with all exhibits has been electronically served on the Patent Owner's attorneys via First Class Mail on the 2nd day of February, 2015 at the following addresses:

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