UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FieldComm Group,
Petitioner,

v.

Sipco, LLC,
Patent Owner.

Patent No. 7,103,511

Issue Date: September 5, 2006

Title: Wireless Communication Networks For Providing Remote Monitoring Of Devices

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PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT 7,103,511 UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. §§ 42.100 ET SEQ.

TABLE OF CONTENTS

Page

TABLE OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 7,103,511 (issued September 5, 2006), *Wireless Communication Networks For Providing Remote Monitoring Of Devices.*
1002	Kantronics KPC-3 – Users Guide, 1997 ("Kantronics")
1003	AX.25 Amateur Packet-Radio Link-Layer Protocol, Version 2.0, October 1984 ("AX.25 Protocol")
1004	Expert Declaration of Fred Goldstein ("Expert Decl.")
1005	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.
1006	Presentation Re: Inter Partes Review of U.S. Patent No. 7,103,511
1007	"Adding Packet Radio to the Ultrix Kernel," Neuman, Clifford, December 1987 ("Ultrix")
1008	Index of University of Washington Dept. of CSE Technical Reports.
1009	Curriculum Vitae of Fred Goldstein

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. 7,103,511 (the '511 patent) (Ex. 1001) is asserted against the following parties: *Emerson Electric Co. et al v. SIPCO LLC et al*, No 1:13-CV-02528 (N.D. Ga, July 31, 2013); *SIPCO, LLC v. Comcast Corp. et al*, No 9:11-CV-80999 (S.D. Fl, Sept. 6, 2011); *SIPCO, LLC v. ADT Security Services et al*, No 9:11-CV-80521 (S.D. Fl, May 6, 2011); *SIPCO, LLC v. Control4 Corp. et al*, No 1:11-CV-00612 (N.D. Ga, Feb. 28, 2011); *SIPCO, LLC v. ABB et al*, No 6:11-CV-00048 (E.D. Tx, Jan. 31, 2011); *SIPCO, LLC v. Energate, Inc. et al*, No 6:10-CV-00533 (E.D. Tx, Oct. 7, 2010); *Siemens Industry, Inc v. SIPCO, LLC.*, 1:10-CV-02478 (N.D. Ga, Aug. 9, 2010); *SIPCO, LLC v. Control4 Corp. et al*, No 6:10-CV-00249 (E.D. Tx, May 11, 2010); *SIPCO, LLC v. Amazon.com, Inc. et al*, No 2:08-CV-00359 (E.D. Tx, Sept. 19, 2008); *SIPCO, LLC v. Datamativ, Ltd. et al*, No 6:09-CV-00532 (E.D. Tx, Nov. 24, 2009); *SIPCO, LLC v. The Toro Company*, No 2:08-CV-00505 (E.D. Pa, Jan. 31, 2008); *IP CO, LLC v. CellNet Technology, Inc. et al*, No 1:06-CV-03048 (N.D. Ga, Dec. 15, 2006).

Petitioner is also seeking *inter partes* review of related U.S. Patent No. 6,437,692 and U.S. Patent No. 7,697,492 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: 511FieldCommIPR@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 1-4, 6-11, 27-47, and 51-64 of U.S. Patent No. 7,103,511 ("the '511 patent") (Ex. 1001) be cancelled based on the following grounds of unpatentability, explained in detail below.

Ground 1 – Claims 1-4, 6-11, 27-47, and 51-64 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 '511 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. "unique identifier"

The term "unique identifier" should be construed as **an identifier suitable to identify one from another**. '511 patent, 7:5-7; Expert Decl. ¶18.

2. "repeated data message"

The term "repeated data message" has been construed as **a message transmitted from the repeater containing the sensor data signal from the original data message and the unique identifier corresponding to the repeater** 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, '511 patent, 14:49-52; Expert Decl. ¶15; and Ex. 1006, Claim Construction Order at pp. 35-37.

3. "site controller"

The term "site controller" has been construed as **a device that manages and relays data between the wireless transceivers and the wide area network** 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, '511 patent, 9:54-57; Expert Decl. ¶16; and Ex. 1006, Claim Construction Order at p. 41.

III. OVERVIEW OF THE '511 PATENT

A. Brief Description

The '511 patent is directed to a wireless communication network for monitoring and controlling remote devices. '511 patent, Abstract.

The network includes a plurality of wireless transceivers that receive sensor data signals from remote sensing and/or actuating devices. Each of the wireless transceivers has a unique identifier. These wireless transceivers then transmit a data message that includes their identifier and the sensor data signal using a predefined wireless communication protocol. The wireless transceivers can also act as repeaters to transmit a repeated message when necessary.

The network also includes site controllers that receive the data messages, parse the messages, and further route them to a host computer via a WAN.

B. Prosecution History of the '511 Patent

The '511 Patent was filed on August 9, 2001. In an Office Action mailed January 3, 2003, all original claims 1-26 were rejected. Specifically, claims 1-4, 7-16, 19-23, and 26 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,907,491 to Canada *et al.* in view of U.S. Patent No. 6,141,137 to Shaughnessy *et al.* And, claims 5, 6, 17, 18, 24 and 25 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,907,491 to Canada *et al.* in view of U.S. Patent No. 6,141,137 to Shaughnessy *et al* and further in view of U.S. Patent No. 6,288,641 to Casais.

In a Response, on April 8, 2003, the applicant amended claims 1, 7, and 26; and added new claims 27-29. The amendments to claims 1, 7, and 26 were minor, and the applicant argued for reconsideration and allowance of all claims 1-29 over the prior art. The Office was not convinced by the applicant's arguments, and in response, on July 1, 2003 the Office mailed a Final Office Action rejecting all claims 1-29. Specifically, claims 1-4, 7-16, 19-23, 26, 27, and 29 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,907,491 to Canada *et al.* in view of U.S. Patent No. 6,141,137 to Shaughnessy *et al.* And, claims 5, 6, 17, 18, 24 and 25 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,907,491 to Canada *et al.* in view of U.S. Patent No. 6,141,137 to Shaughnessy *et al* and further in view of U.S. Patent No.

6,288,641 to Casais. And, finally, claim 28 was rejected as being unpatentable over U.S. Patent No. 5,907,491 to Canada *et al.* in view of U.S. Patent No. 6,141,137 to Shaughnessy *et al* and further in view of U.S. Patent No. 6,060,994 to Chen.

In a Response, on August 22, 2003, the applicant made a minor amendment to claim 27 to correct an informality and further argued for patentability of claims 1-29. The Office was not convinced by applicant's arguments, and on September 25, 2003, the Office mailed an Advisory Action stating that the applicant's Reply filed on August 22, 2003 failed to place the application in condition for allowance. The applicant responded with an Appeal Brief on January 5, 2004 to further argue for patentability of all rejected claims 1-29.

The Appeal continued with the Examiner filing an Answer to the Appeal Brief on March 26, 2004 and the applicant responding the Examiner's Answer with a Reply Brief on May 17, 2004. Eventually, on August 31, 2005, the Board issued their decision to reverse the decision of the Examiner to reject claims 1-29 and returned the Appeal to the Examiner. The Office responded with a Notice of Allowance on October 6, 2005 allowing all claims 1-29. Specifically, the Office stated that "[c]laims 1-29 are allowable over the prior art because a wireless communication network adapted for use in an automated monitoring system for monitoring and controlling a plurality of remote devices via a host computer

connected to a wide area network, the wireless communication network comprising: a plurality of wireless transceivers having unique identifiers, each of the transceivers configured to transmit an original data message and further configured to receive the original data message transmitted by one of the other wireless transceivers is not found, taught or suggested in the prior art of record." *See* October 6, 2005 Notice of Allowance.

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 1007, by Neuman and Yamamoto titled "Adding Packet Radio to the Ultrix Kernel" was published December 7, 1987. Included as Exhibit 1008 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 '511 patent. *See* Exhibit 1008 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.

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. 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 ¶17.

A person of ordinary skill in the art would have understood that a system integrating the Kantronics KP-3 Plus relies upon, is intended to use, and does implement the AX.25 Protocol, primarily because Kantronics provides that the hardware and software "incorporates" this protocol. Further, both references are also analogous art in the same field of endeavor because each discloses the use of packet radio communication design for remote message delivery. *See* Expert Decl. at ¶17. The packet radio communication systems disclosed in Kantronics and AX.25 Protocol were readily combined to deliver stable and predictable remote communications using packet radio messages. *See* Expert Decl. at ¶17.

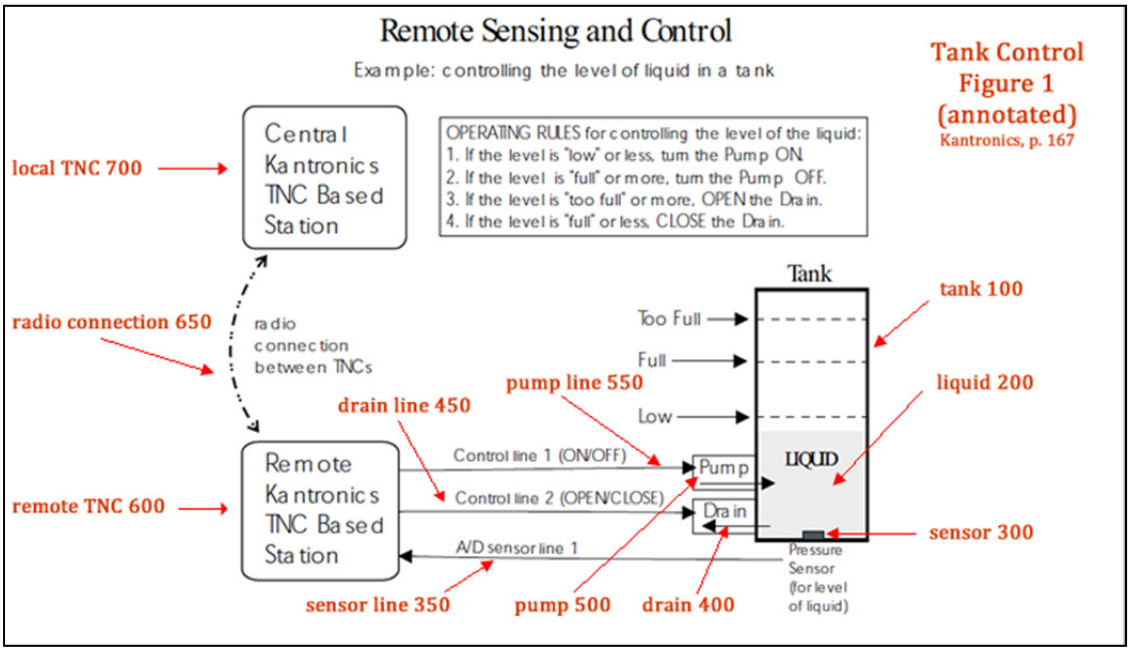
A. Kantronics in view of AX.25 Protocol Renders Obvious Claims 1-4, 6-11, 27-47, and 51-64 of the '511 Patent

Claim 1

[1a] A wireless communication network adapted for use in an automated monitoring system for monitoring and controlling a plurality of remote devices via a host computer connected to a wide area network, the wireless communication network comprising:

Kantronics discloses an automated monitoring system for communicating signals and sensor data between remote devices. Kantronics discloses a number of

a network of devices in communication using a radio packet network (the recited WAN). Kantronics at p. 153-54.

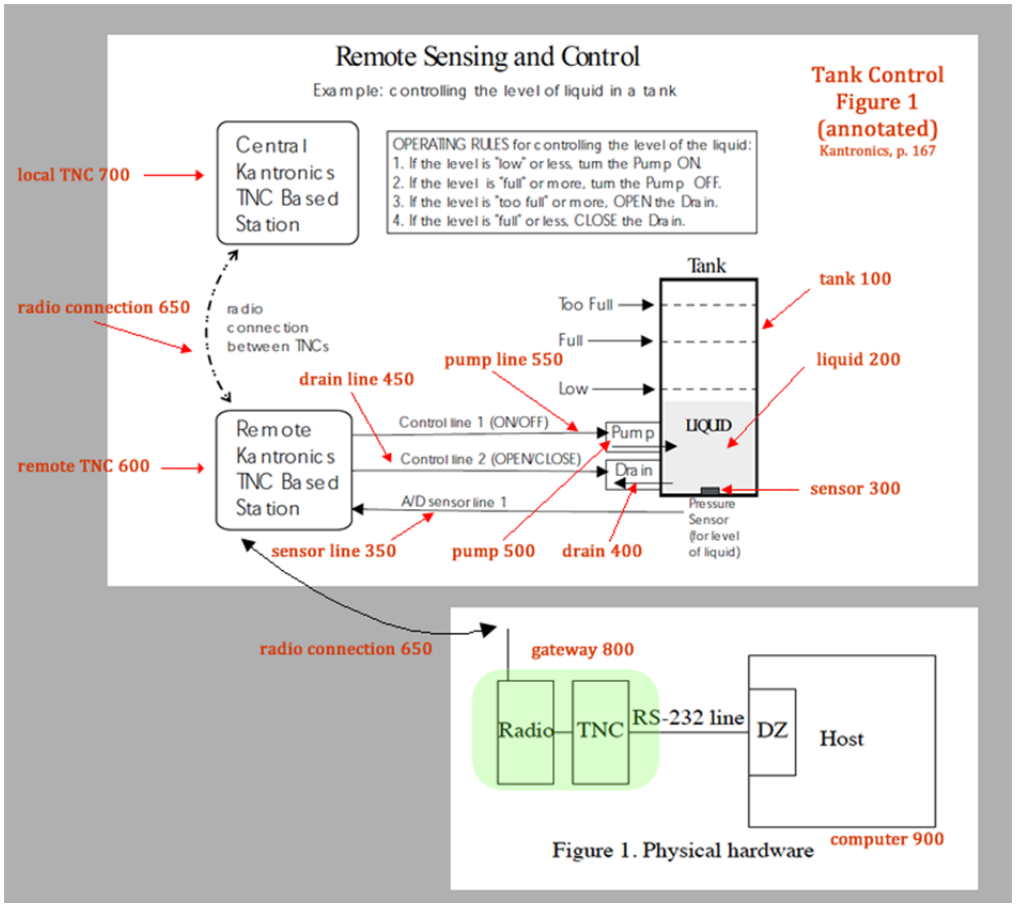


Kantronics at p. 167

As shown in Tank Control Figure 1 above (annotated from Kantronics at p. 167), TNC stations operate together to sense and control the liquid level in a tank. Specifically, remote TNC 600 and local TNC 700 communicate via radio connection 650. Remote TNC 600 sends control-based open/close and on/off signals via drain line 450 and pump line 550 to control liquid level in a tank. Sensor-based data is communicated from sensor 300 to remote TNC 600 via sensor line 350. Local TNC 700 delivers command information from a computer (not shown) to remote TNC 600.

As an alternative, 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. 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.



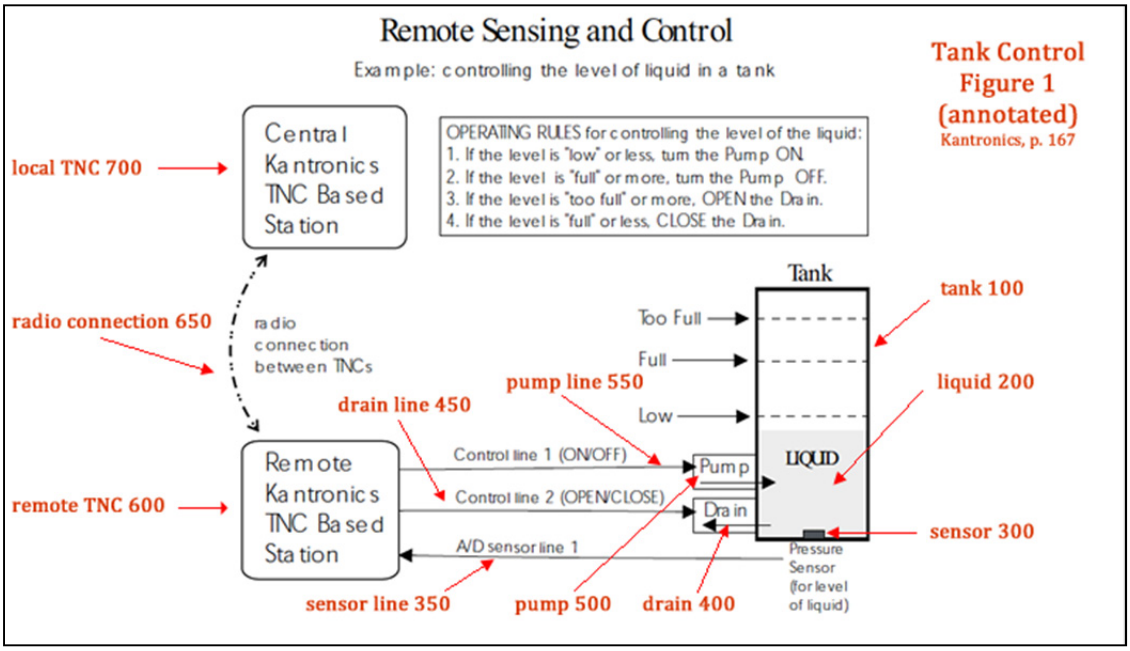
Kantronics at 167; Ultrix at 2 (combined annotated figure)

A person of ordinary skill in the art would further 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.

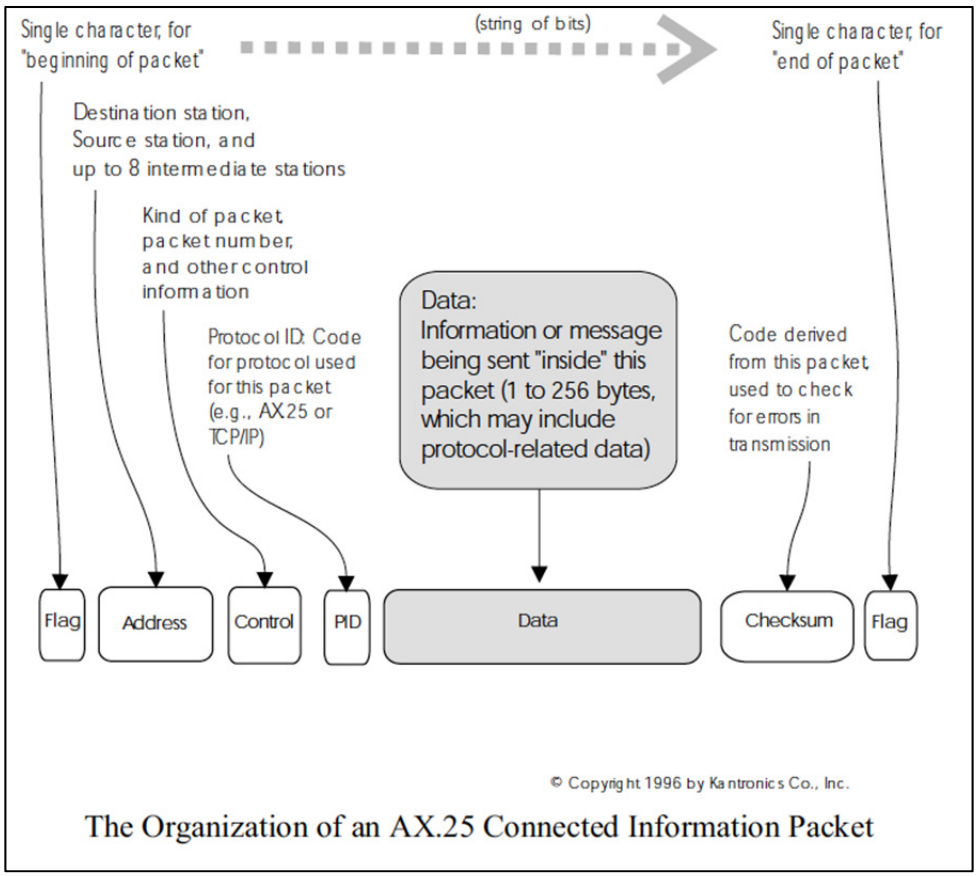
[1b] a plurality of wireless transceivers having unique identifiers,

Kantronics discloses a plurality of wireless transceivers (remote TNC 600 and local TNC 700) as illustrated in annotated Tank Control Figure 1 below.



Kantronics at p. 167

Kantronics discloses that a local TNC station 700 communicates with remote TNC 600 using AX.25 messages, as shown in the figure below.



Kantronics at p. 27.

The figure discloses addresses used to send and receive messages among TNC stations (destination and source station addresses). The addresses are used to discriminate among different devices within the packet radio network.

A person of ordinary skill in the art would understand that each of these transceiver addresses is unique in order to properly route a packet from the source to the destination. *See* Expert Decl. ¶18.

[1c] each of the plurality of wireless transceivers configured to receive a sensor data signal from one of the plurality of remote devices and transmit an original data message using a predefined wireless communication protocol,

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. Wherein, the "single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255." Kantronics at p. 166. As such, the remote TNC 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, each TNC will "assemble a 'packet' of digital information for transmission." Kantronics at p. 21. AX.25 Protocol discloses that "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.

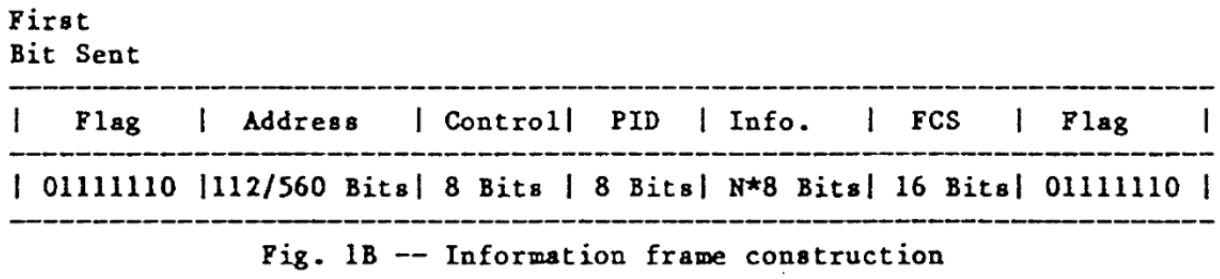


Fig. 1B -- Information frame construction

AX.25 Protocol at p. 2.

Therefore, Kantronics discloses that each of the plurality of wireless transceivers (i.e. local TNC 700) is configured to receive a sensor data signal (*e.g.,* "analog voltage presented at two specified inputs into digital values" from tank sensor 300) from one of the plurality of remote devices (i.e. the tank) via remote TNC 600 and transmit an original data message (*e.g.,* "packet") using a predefined wireless communication protocol (*e.g.,* "AX.25 protocol").

[1d] the original data message comprising the corresponding unique identifier and sensor data signal,

AX.25 Protocol discloses data messages in the form of "small blocks of data, called frames. Each frame is made up of several smaller groups, called fields" as illustrated below. 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. Additionally, 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 original data message (*e.g.,* "packet") from remote TNC 600

comprises the corresponding unique identifier (*e.g.*, "information indicating who the packet is from" such as remote TNC 600 monitoring the tank) and converted sensor data from the tank sensor (*e.g.,* "information field") via remote TNC 600.

[1e] and further configured to receive the original data message transmitted by one of the other wireless transceivers and transmit a repeated data message using the predefined communication protocol,

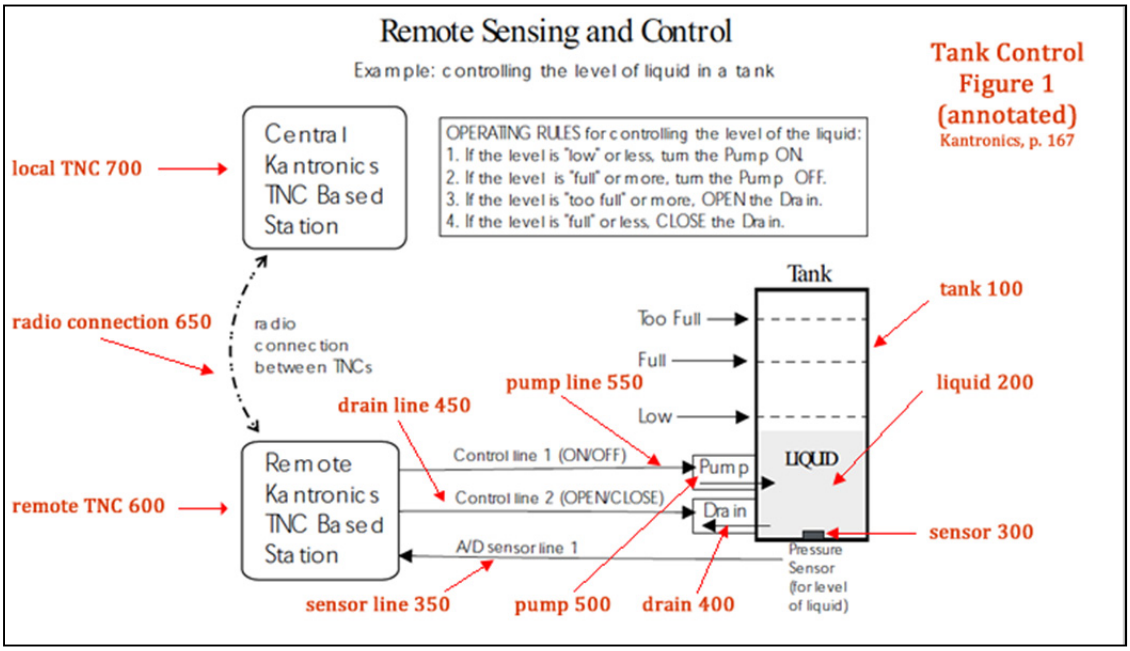
AX.25 Protocol discloses that the "link-layer AX.25 protocol allows operation through more than one repeater." AX.25 Protocol at p. 9. Specifically, a repeater station is used to "carry the information beyond the range of the originating station and into the range of the destination station." Kantronics at p. 20. Additionally, Kantronics discloses that the packets include 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 system is configured to permit a data message originating from remote TNC 600 (original data message) to be received by an intermediate TNC repeater, whereby the TNC repeater station forwards the packet (repeated data message) to local TNC 700, using the predefined communication protocol (*e.g.,* "AX.25 protocol").

[1f] the repeated data message including the sensor data signal and the corresponding unique identifier;

AX.25 Protocol discloses that in Multiple Repeater Operation, "a frame must pass through a multiple-repeater chain." AX.25 Protocol at pp. 9-10. The repeated data message will merely "pass through" a repeater. Therefore, as discussed above, the repeated data message (*e.g.*, "packet") includes the corresponding unique identifier (*e.g.*, address information or "information indicating who the packet is from") and sensor data signal (*e.g.*, "information field").

[1g] and a site controller in communication with at least one of the plurality of wireless transceivers,

Kantronics discloses a site controller (local TNC 700) as illustrated in annotated Tank Control Figure 1 below:



Kantronics at p. 167

Further, the site controller (local TNC 700) is in communication with at least one of the plurality of wireless transceivers (remote TNC 600) via radio connection 650. Kantronics at p. 167. Specifically, the "transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC." Kantronics at p. 19.

[1h] the site controller configured to receive the original data messages and the repeated data messages, identify the remote device associated with the corresponding sensor data signal, and provide information related to the sensor data signal to the wide area network for delivery to the host computer.

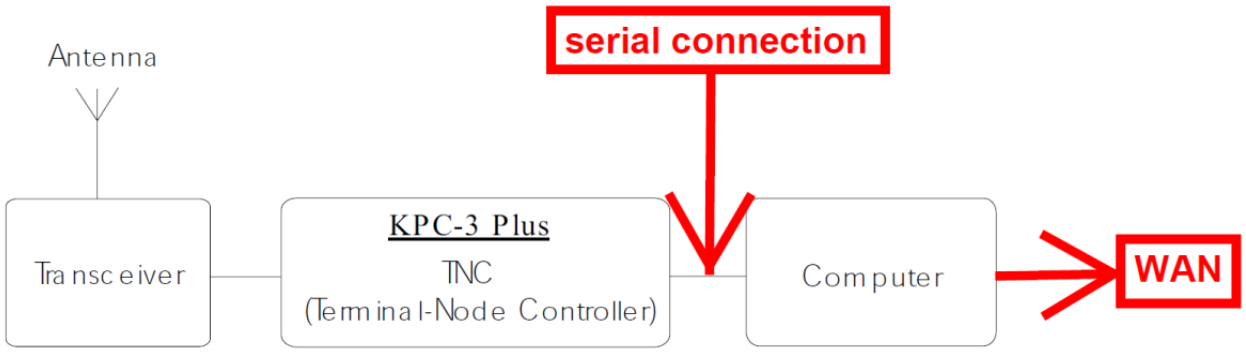
Kantronics discloses that the site controller (local TNC 700) is configured to receive the original data messages and the repeated data messages. Kantronics at p. 21. Specifically, the TNC "uses the 'connection' information about where the message is to go and the path it is to take and combines this with the message itself to assemble a 'packet' of digital information for transmission from the transceiver." Kantronics at p. 21.

The AX.25 protocol, as used in Kantronics, discloses that a remote device (remote TNC 600) is associated with the corresponding sensor data signal. Kantronics at p. 167; 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. ¶¶19-23.

Kantronics discloses providing information related to the sensor data signal to a host computer. Kantronics at pp. 184-185. Specifically, "entering the ANALOG command returns a string of 8 values, based on the current voltage readings from 8 A-to-D lines." Kantronics at p. 184. Wherein, the "response is in the following form: AN0 / AN1 / AN2 / AN3 / AN4 / AN5 / AN6 / AN7." Kantronics at p. 184. Wherein, "AN0, input (0), reports a decimal number in the range of (0-255), representing the current DC voltage of an external input read from either pin 4 on the Radio Port or from pin 18 on the Serial Port, depending on the current setting of jumper J8" and "AN1, input (1), reports a decimal number in the range of (0-255), representing the current DC voltage of external input read from either pin 8 on the Radio Port or from pin 11 on the Serial Port, depending on the current setting of jumper J10." Kantronics at pp. 184-185.

Finally, 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.



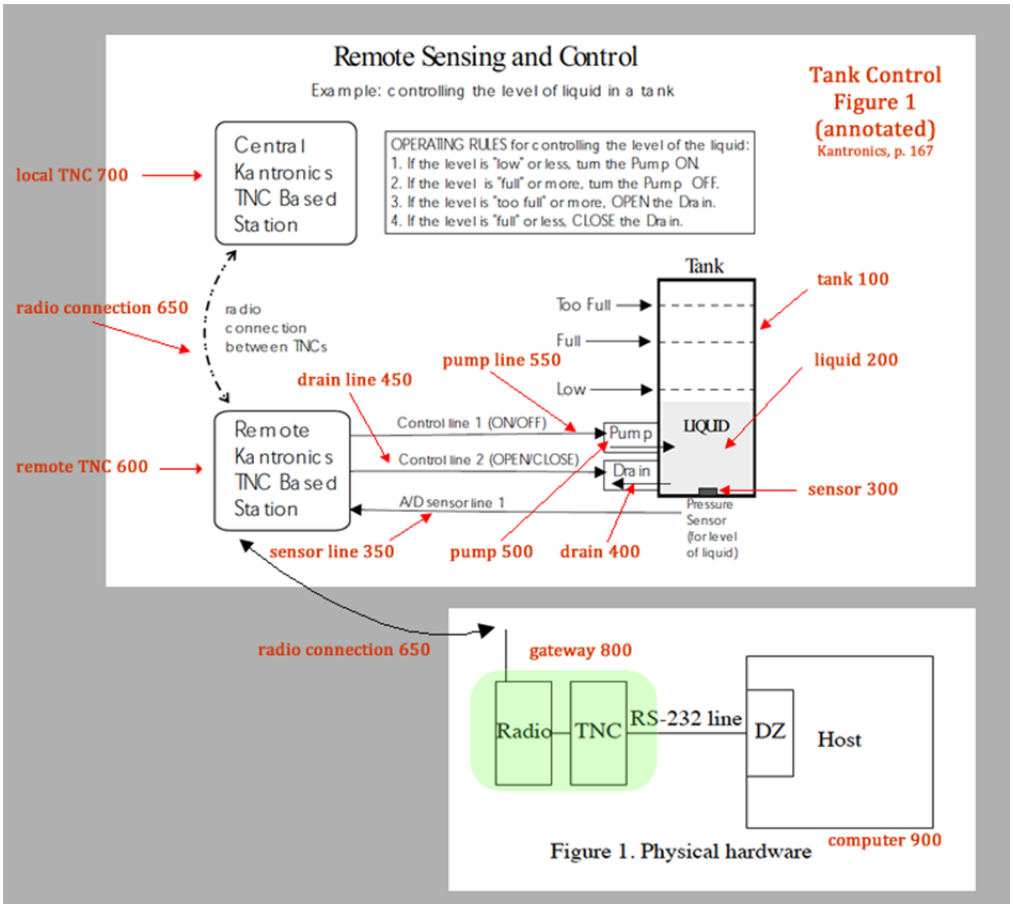
Kantronics at p. 19.

A person of ordinary skill in the art would understand that since the TNC "can work with any computer," and because it is well-known that a computer connects to a WAN, Kantronic teaches that the disclosed computer could include a WAN connection, using ordinary network hardware and software in order to interface the packet radio network with the WAN. *See* Expert Decl. ¶¶19-23. Therefore, the site controller is configured to receive the original data messages and the repeated data messages, identify the remote device associated with the corresponding sensor data signal, and provide information related to the sensor data signal to the wide area network for delivery to the host computer.

Alternatively, Kantronics discloses an 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 or running on another computer communicating with computer 900 via the IP network (WAN), could receive packetized information 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).



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

A person of ordinary skill in the art would understand that the connected computer 900 could receive packetized data from the AX.25 network via the gateway, and deliver the information via the IP WAN to which it is connected.

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.

Claim 2

[2a] The wireless communication network of claim 1, further comprising a plurality of repeaters having unique identifiers,

Kantronics discloses that each repeater (*e.g.,* "transceivers") "sends and receives radio signals." Kantronics at p. 19. Further, 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. And, this packet includes a header containing "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.

Additionally, AX.25 discloses that "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. A person of ordinary skill in the art would understand that each repeater includes a transceiver address

that is unique in order to properly route the packet from the source to the destination. *See* Expert Decl. ¶18.

[2b] each of the plurality of repeaters in communication with at least one of the plurality of wireless transceivers and configured to receive the original data message transmitted by the at least one of the plurality of wireless transceivers

Kantronics discloses a plurality of repeaters (*e.g.,* "stations") in communication with the plurality of wireless transceivers. Kantronics at p. 101. Further, Kantronics discloses that the repeaters are configured to receive the original data message transmitted by a wireless transceiver. 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." Kantronics at p. 101.

[2c] and transmit a repeated data message using the predefined communication protocol,

AX.25 Protocol discloses that the "link-layer AX.25 protocol allows operation through more than one repeater." AX.25 Protocol at p. 9. Further, "[a]s a frame progresses through a chain of repeaters, each successive repeater will set the H hit (has-been-repeated bit) in its SSID octet, indicating that the frame has been successfully repeated through it. No other changes to the frame are made (except for the necessary recalculation of the FCS). The destination station can determine the route the frame took to reach it by examining the address field." AX.25 Protocol at p. 9. Therefore, the repeaters transmit a repeated data message using the predefined communication protocol (*e.g.,* "AX.25 protocol").

[2d] the repeated data message including the sensor data signal from the original data message and the unique identifier corresponding to the repeater.

AX.25 Protocol discloses that "[a]s a frame progresses through a chain of repeaters, each successive repeater will set the H hit (has-been-repeated bit) in its SSID octet, indicating that the frame has been successfully repeated through it. No other changes to the frame are made (except for the necessary recalculation of the FCS)." AX.25 Protocol at p. 9. Therefore, as discussed above, the repeated data message (*e.g.,* "packet") includes the sensor data signal from the original data message (*e.g.,* "information field") and the unique identifier corresponding to the repeater (*e.g.,* "any relay stations needed to get to the destination") because "[n]o other changes to the frame are made." AX.25 Protocol at p. 9.

Claim 3

[3a] The wireless communication network of claim 1, wherein the site controller is further configured to provide a command message to one of the plurality of wireless transceivers

Kantronics/AX.25 Protocol discloses the wireless communication network of claim 1. See above.

Kantronics discloses that the site controller (local TNC 700) is further configured to provide a command message (*e.g.,* "ANALOG") to one of the plurality of wireless transceivers. Specifically, a user "can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing." Kantronics at p. 166. Wherein, the "[d]ata can be gathered from a remote site by connecting to MYREMOTE and then issuing the ANALOG command." Kantronics at p. 185. Further, a user can "use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC." Kantronics at p. 166. Additionally, "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. Therefore, a person of ordinary skill in the art would understand that the wireless transceiver receives the message requesting sensed data in the form of the "ANALOG command."

[3b] and each of the plurality of wireless transceivers are further configured to transmit, in response to the command message, the original data message,

Kantronics discloses that the "response is in the following form: AN0 / AN1 / AN2 / AN3 / AN4 / AN5 / AN6 / AN7." Kantronics at p. 184. Wherein, "AN0, input (0), reports a decimal number in the range of (0-255), representing the current DC voltage of an external input read from either pin 4 on the Radio Port or from pin 18 on the Serial Port, depending on the current setting of jumper J8" and "AN1, input (1), reports a decimal number in the range of (0-255), representing the current DC voltage of external input read from either pin 8 on the Radio Port or from pin 11 on the Serial Port, depending on the current setting of jumper J10." Kantronics at pp. 184-185. Further, "entering the ANALOG command returns a string of 8 values, based on the current voltage readings from 8 A-to-D lines." Kantronics at p. 184. The returned string is the sensor reading and corresponds to the recited "original message." Therefore, the wireless transceiver is configured to transmit, in response to the command message (*e.g.,* "ANALOG"), the original data message (*e.g.,* a packet including "the following form: AN0 / AN1 / AN2 / AN3 / AN4 / AN5 / AN6 / AN7").

[3c] wherein the original data message corresponds to the command message.

Kantronics discloses that "entering the ANALOG command returns a string of 8 values, based on the current voltage readings from 8 A-to-D lines." Kantronics at p. 184. Therefore, the original data message (*e.g.,* "a string of 8 values, based on the current voltage readings from 8 A-to-D lines") corresponds to the command message (*e.g.,* "ANALOG") because the 8 value return string is a response to the ANALOG command message.

Claim 4

[4a] The wireless communication network of claim 1, wherein the predefined communication protocol comprises a data packet comprising: a receiver address identifying the receiver of the data packet;

Kantronics/AX.25 Protocol discloses the wireless communication network of claim 1. See above.

Kantronics discloses that each TNC 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. Additionally, AX.25 Protocol discloses that "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. Therefore, the data packet comprises a receiver address identifying the receiver of the data packet.

[4b] a sender address identifying the sender of the data packet;

As discussed above, AX.25 Protocol discloses that "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. Therefore, the data packet comprises a sender address identifying the sender of the data packet.

[4c] and a command indicator specifying a predefined command code.

Kantronics discloses a command syntax for issuing commands. Kantronics at p. 178. The syntax includes a command name followed by command parameters. The combination of the command name and the command parameters corresponds to the recited "command indicator." The recited "command code" is the Kantronics command name. Generally, the command name specifies certain actions. Specifically, one particular command name "CTRL" "causes the KPC-3 Plus to activate the specified output line (A or B) to the radio port as indicated." Kantronics at p. 199. Further, "to pulse the A output (CTLA) 3 times, you would give the command 'CTRL A 3'. You may optionally specify the number of times to pulse the output (n), or to turn the output ON, or OFF." Kantronics at p. 199.

Illustrated as a letter sequence below, the command syntax discloses the recited command indicator as an alphanumeric sequence that includes the command code "CTRL", a further command directive (*e.g.,* "A" or "B"), and additional command data (*e.g.,* "n," "ON," "OFF," or "LONG"):

```
CTRL [A | B] {n | ON | OFF | LONG} (n=1-20)
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Kantronics at p. 199.

Alternatively, the AX.25 Protocol discloses a command indicator (*e.g.,* "control field bit") comprising a command code (*e.g.,* "control fields"). AX.25 Protocol at pp. 12-13. Specifically, the "control field is responsible for identifying the type of frame being sent, and is also used to convey commands and responses from one end of the link to the other in order to maintain proper link control." AX.25 Protocol at p. 10. Wherein, "Fig. 5 shows the basic format of the field associated with these types of frames." AX.25 Protocol at p. 10.

Control-Field Type	Control-Field Bits 7 6 5	4	3 2 1 0
I Frame	N(R)	P	N(S) 0
S Frame	N(R)	P/F	S S 0 1
U Frame	M M M	P/F	M M 1 1

Fig. 5 -- Control-field formats

AX.25 Protocol at p. 10.

Claim 6

[6] The wireless communication network of claim 1, wherein the plurality of wireless transceivers are further configured to receive signals via Bluetooth technology.

Kantronics discloses "transceivers" that "sends and receives radio signals." Kantronics at p. 19, 166. The '511 patent specification provides: the "Specification of the Bluetooth System: 15 Specification Volume 1, Feb. 22, 2001" is "incorporated by reference in its entirety." '511 patent at 20:6-19. A person of ordinary skill in the art would understand that a transceiver configured to send and receive radio signals could be replaced or modified such that the transceiver operated in accordance with the Bluetooth specification. A person of ordinary skill in the art understood that Bluetooth operates according to a specific set of protocols and radio frequencies for sending and receiving radio signals over a short transmission range. *See* Expert Decl. ¶¶25-28. Further, the use of Bluetooth technology for the intended purpose of the technology – short-range wireless communication between devices - is not novel and was well-understood to yield predictable results.

Claim 7

[7] The wireless communication network of claim 1, wherein the plurality of wireless transceivers are further configured to receive signals via IEEE standard 802.11(b).

Kantronics discloses "transceivers" that "sends and receives radio signals." Kantronics at p. 19; Kantronics at p. 166. A person of ordinary skill in the art would understand that a transceiver configured to send and receive radio signals could be replace or modified such that the transceiver operated in accordance with the IEEE standard 802.11(b). A person of ordinary skill in the art understood that 802.11(b) operates according to a specific set of protocols and radio frequencies for sending and receiving radio signals in short range. *See* Expert Decl. ¶¶29-32. Further, the use of 802.11(b) technology for the intended purpose of the technology – short-range wireless communication between devices - is not novel and was well-understood to yield predictable results. *See* Expert Decl. ¶¶29-32.

Claims 8-11, 27-47, and 51-64

Claims 8-11, 27-47, and 51-64	Prior Art Disclosure
Claim 8	
[8a] A wireless communication network adapted for use in an automated monitoring system for monitoring and controlling a plurality of remote devices via a host computer connected to a wide area network, the wireless communication network comprising:	*See* [1a] analysis above.
[8b] a plurality of wireless communication means having unique identifiers,	*See* [1b] analysis above.
[8c] each of the plurality of wireless communication means configured to receive a sensor data signal from one of the	*See* [1c] analysis above.

plurality of remote devices	
[8d] and transmit an original data message using a predefined wireless communication protocol,	*See* [1c] analysis above.
[8e] the original data message comprising the corresponding unique identifier and sensor data signal,	*See* [1d] analysis above.
[8f] and further configured to receive the original data message transmitted by one of the other wireless transceivers	*See* [1e] analysis above.
[8g] and transmit a repeated data message using the predefined communication protocol,	*See* [1e] analysis above.
[8h] the repeated data message including the sensor data signal and the corresponding unique identifier;	*See* [1f] analysis above.
[8i] a means for receiving each of the original data messages and the repeated data messages;	*See* [1h] analysis above.
[8j] a means for identifying, for each received message, the remote device associated with the corresponding sensor data signal;	*See* [1h] analysis above.
[8k] and a means for providing information related to the sensor data signal to the wide area network for delivery to the host computer.	*See* [1h] analysis above.
Claim 9	
[9a] The wireless communication network of claim 8, further comprising a plurality of repeating means	*See* [2a] analysis above.

having unique identifiers,	
[9b] each of the plurality of repeating means in communication with at least one of the plurality of wireless communication means and comprising a means for receiving the original data message transmitted by the at least one of the plurality of wireless transceivers	*See* [2b] analysis above.
[9c] and a means for transmitting a repeated data message using the predefined communication protocol,	*See* [2c] analysis above.
[9d] the repeated data message including the sensor data signal from the original data message and the unique identifier corresponding to the repeater.	*See* [2d] analysis above.
Claim 10	
[10a] The wireless communication network of claim 8, further comprising a means for providing a command message to one of the plurality of wireless communication means,	*See* [3a] analysis above.
[10b] wherein each of the wireless communication means further comprise a means for transmitting, in response to the command message, the original data message,	*See* [3b] analysis above.
[10c] wherein the original data message corresponds to the command message.	*See* [3c] analysis above.
Claim 11	
[11a] The wireless	*See* [4a] analysis above.

communication network of claim 8, wherein the predefined communication protocol comprises a data packet comprising: a means for identifying the receiver of the data packet;	
[11b] a means for identifying the sender of the data packet;	*See* [4b] analysis above.
[11c] and a command means for specifying a predefined command code.	*See* [4c] analysis above.
Claim 27	
[27a] A method for enabling customers to monitor remote devices via a wide area network (WAN), the method comprising the steps of:	*See* [1a] analysis above.
[27b] establishing a wireless communication network that enables each of a plurality of customers to monitor at least one remote device via a wide area network,	*See* [1a], [1c], [1h], and [3a]-[3c] analysis above.
[27c] the wireless communication network comprising: a plurality of wireless transceivers each integrated with one of the plurality of remote devices and having a unique identifier and configured to receive a sensor data signal from the remote device and transmit an original data message using a predefined wireless communication protocol,	*See* [1b], [1c], and [1e] analysis above.
[27d] the original data message comprising the corresponding	*See* [1d] analysis above.

unique identifier for the originating wireless transceiver,	
[27e] each wireless transceiver further configured to receive the original data message transmitted by one of the other wireless transceivers and transmit a repeated data messaging using the predefined communication protocol,	*See* [1e] analysis above.
[27f] the repeated data message including the original sensor data signal and the corresponding unique identifiers for the originating wireless transceiver and the repeating wireless transceiver;	*See* [1f] analysis above.
[27g] and a site controller in communication with at least one of the plurality of wireless transceivers,	*See* [1g] analysis above.
[27h] the site controller configured to receive the original data messages and the repeated data messages, identify the remote device associated with the corresponding sensor data signal, and provide information related to the sensor data signal to a WAN for delivery to a host computer;	*See* [1h] analysis above.
[27i] and providing an organization access to the wireless communication network.	*See* [1h] and [3a]-[3c] analysis above.
Claim 28	
[28] The method of claim 27,	*See* [1h] and [3a]-[3c] analysis above.

further comprising the step of receiving compensation for providing the organization access to the wireless communication network.	
Claim 29	
[29] The method of claim 28, wherein the step of providing the organization access to the wireless communication network comprises enabling at least one remote device corresponding to a customer of the organization to communicate with the wireless communication network so that the remote device may be monitored via the WAN.	*See* [1a] and [1h] analysis above.
Claim 30	
[30] The wireless communication device of claim 1, wherein the site controller is configured to send a command message to the second wireless transceiver, wherein the command message includes a "to address" portion, and wherein the "to address" portion identifies the second wireless transceiver and identifies a device type of the second remote device.	*See* [1b], [1e], [1f], [1h], and [2a]-[2d] analysis above. It would be obvious to a person of ordinary skill in the art that the "to address" portion can identify the second wireless transceiver and identify a device type of the second remote device. *See* Expert Decl. ¶33.
Claim 31	
[31] The wireless communication device of claim 1, wherein the site controller is configured to send a command message to the second wireless transceiver, wherein the command message includes a	*See* [1b], [1e], [1f], [1h], and [2a]-[2d] analysis above. It would be obvious to a person of ordinary skill in the art that the "to address" portion can identify a manufacturer of the second remote device. *See* Expert Decl. ¶¶34-35.

"to address" portion, and wherein the "to address" portion identifies a manufacturer of the second remote device.	
Claim 32	
[32] The wireless communication device of claim 1, wherein the site controller is configured to send a command message to the second wireless transceiver, wherein the command message includes a "to address" portion, and wherein the "to address" portion identifies an owner of the second remote device.	*See* [1b], [1e], [1f], [1h], and [2a]-[2d] analysis above. It would be obvious to a person of ordinary skill in the art that the "to address" portion can identify an owner of the second remote device. *See* Expert Decl. ¶¶36-40.
Claim 33	
[33] The wireless communication device of claim 1, wherein the site controller is configured to send a command message to the second wireless transceiver, wherein the command message includes a "to address" portion, and wherein the "to address" portion identifies that the command message is directed towards all remote devices.	*See* [1b], [1e], [1f], [1h], and [2a]-[2d] analysis above. It would be obvious to a person of ordinary skill in the art that the "to address" portion can identify that the command message is directed towards all remote devices. *See* Expert Decl. ¶¶41-42.
Claim 34	
[34] The wireless communication device of claim 1, wherein the site controller is configured to send a command message to the second wireless transceiver, and wherein the command message controls an actuator associated with the second remote device.	*See* [3a]-[3c] and [4c] analysis above.

Claim 35	
[35] The wireless communication device of claim 34, wherein the command message controls a change in a current actuator setting of the actuator.	*See* [3a]-[3c] and [4c] analysis above.
Claim 36	
[36] The wireless communication device of claim 1, wherein a data field of an upstream message identifies a number of upstream repeaters and sets a number of retries by each identified upstream repeater.	*See* [1e], [1f], and [2a]-[2d] analysis above. It would be obvious to a person of ordinary skill in the art that the data field of an upstream message identifies a number of upstream repeaters and sets a number of retries by each identified upstream repeater. *See* Expert Decl. ¶¶43-48.
Claim 37	
[37] The wireless communication device of claim 1, wherein the plurality of wireless transceivers includes a first wireless transceiver, and wherein the first wireless transceiver has two unique addresses comprising a first repeater address and a first unique non-repeater address.	*See* [1e], [1f], and [2a]-[2d] analysis above. It would be obvious to a person of ordinary skill in the art that the wireless transceiver has two unique addresses comprising a first repeater address and a first unique non-repeater address. *See* Expert Decl. ¶49.
Claim 38	
[38] The wireless communication device of claim 37, wherein the first wireless transceiver is configured to substantially repeat messages directed to the first unique repeater address, and is configured to not repeat messages directed to the first unique non-repeater address.	*See* [1e], [1f], and [2a]-[2d] analysis above. It would be obvious to a person of ordinary skill in the art that the first wireless transceiver is configured to substantially repeat messages directed to the first unique repeater address, and is configured to not repeat messages directed to the first unique non-repeater address. *See* Expert Decl. ¶50.

Claim 39	
[39] The wireless communication device of claim 37, wherein the first wireless transceiver is configured to evaluate an incoming message to determine whether the incoming message is directed to the first unique repeater address or is directed to the first unique non-repeater address.	*See* [1e], [1f], and [2a]-[2d] analysis above. It would be obvious to a person of ordinary skill in the art that the first wireless transceiver is configured to evaluate an incoming message to determine whether the incoming message is directed to the first unique repeater address or is directed to the first unique non-repeater address. *See* Expert Decl. ¶51.
Claim 40	
[40] The wireless communication device of claim 39, wherein the first wireless transceiver is configured to, upon a determination that the incoming message is directed to the first unique repeater address, substantially repeat the incoming message.	*See* [1e], [1f], and [2a]-[2d] analysis above. It would be obvious to a person of ordinary skill in the art that the first wireless transceiver is configured to, upon a determination that the incoming message is directed to the first unique repeater address, substantially repeat the incoming message. *See* Expert Decl. ¶¶52-53.
Claim 41	
[41] The wireless communication device of claim 39, wherein the first wireless transceiver is configured to, upon a determination that the incoming message is directed to the first unique non-repeater address, perform a function according to the incoming message.	*See* [1e], [1f], [2a]-[2d], and [3a]-[3c] analysis above.
Claim 42	
[42] The wireless communication network of claim 5, wherein the first message originating from the site controller is assigned a first	*See* [1g], [1h], and [2a]-[2d] analysis above.

message number by the site controller which identifies the first message.	
Claim 43	
[43] The wireless communication network of claim 42, wherein a second message responding to the first message has a second message number which identifies the second message, and wherein the second message number is equal to the first message number incremented by one.	*See* [2a]-[2d] analysis above.
Claim 44	
[44a] The wireless communication network adapted for use in an automated monitoring system for monitoring and controlling a plurality of remote devices via a host computer connected to a wide area network, the wireless communication network comprising:	*See* [1a] analysis above.
[44b] a plurality of wireless transceivers comprising at least a first wireless transceiver and a second wireless transceiver;	*See* [1b] analysis above.
[44c] a site controller in communication with at least the second wireless transceiver,	*See* [1g] analysis above.
[44d] the first wireless transceiver having a first unique identifier, being configured to receive a first sensor data signal from a first remote device, and being configured to transmit a first	*See* [1b], [1c], and [1d] analysis above.

original data message comprising the first unique identifier and the first sensor data signal;	
[44e] the second wireless transceiver having a second unique identifier, being configured to receive a second sensor data signal from a second remote device, and is configured to transmit a second original data message comprising the second unique identifier and the second sensor data signal,	*See* [1b], [1c], and [1d] analysis above.
[44f] the second wireless transceiver being further configured to receive the first original data message from the first wireless transceiver, and to transmit a first repeated upstream data message including the first unique identifier and the first sensor data signal,	*See* [1e] and [2a]-[2d] analysis above.
[44g] the first wireless transceiver being further configured to receive the second original data message from the second wireless transceiver, and to transmit a second repeated upstream data message including the second unique identifier and the second sensor data signal,	*See* [1e] and [2a]-[2d] analysis above.
[44h] the transmissions having a predefined wireless communication protocol, and	*See* [1c] analysis above.
[44i] the site controller being configured to receive the data	*See* [1h] analysis above.

messages, identify each remote device associated with each sensor data signal in each received data message, and provide information related to each sensor data signal in each received data message to the wide area network for delivery to the host computer.	
Claim 45	
[45] The wireless communication network of claim 44, further comprising a plurality of repeaters having unique identifiers, each of the plurality of repeaters being in communication with at least one of the plurality of wireless transceivers and being configured to receive the first original data message transmitted by the at least one of the plurality of wireless transceivers and transmit a repeated data message using predefined communication protocol, the repeated data message including the sensor data signal from the first original data message and the unique identifier corresponding to the repeater.	*See* [2a]-[2d] analysis above.
Claim 46	
[46] The wireless communication network of claim 44, wherein the site controller is further configured to provide a command message to one of the plurality of wireless transceivers, each of	*See* [3a]-[3c] analysis above.

the plurality of wireless transceivers being further configured to transmit, in response to the command message, a responsive original data message, wherein the responsive original data message corresponds to the command message.	
Claim 47	
[47a] The wireless communication network of claim 44, the predefined communication protocol comprising a data packet including:	*See* [4a] analysis above.
[47b] a receiver address identifying the receiver of the data packet;	*See* [4a] analysis above.
[47c] a sender address identifying the sender of the data packet; and	*See* [4b] analysis above.
[47d] a command indicator specifying a predefined command code.	*See* [4c] analysis above.
Claim 51	
[51] The wireless communication network of claim 44, wherein the plurality of wireless transceivers are further configured to receive signals via Bluetooth technology.	*See* [6] analysis above.
Claim 52	
[52] The wireless communication network of claim 44, wherein the plurality of wireless transceivers are further configured to receive	*See* [7] analysis above.

signals via IEEE standard 802.11(b).	
Claim 53	
[53] The wireless communication device of claim 44, wherein the site controller is configured to send a command message to the second wireless transceiver, the command message including a "to address" portion, wherein the "to address" portion identifies the second wireless transceiver and identifies a device type of the second remote device.	*See* [1b], [1e], [1f], [1h], [2a]-[2d], and [30] analysis above.
Claim 54	
[54] The wireless communication device of claim 44, wherein the site controller is configured to send a command message to the second wireless transceiver, the command message including a "to address" portion, wherein the "to address" portion identifies a manufacturer of the second remote device.	*See* [1b], [1e], [1f], [1h], [2a]-[2d], and [31] analysis above.
Claim 55	
[55] The wireless communication device of claim 44, wherein the site controller is configured to send a command message to the second wireless transceiver, the command message including a "to address" portion, the "to address" portion identifies an owner of the second remote device.	*See* [1b], [1e], [1f], [1h], [2a]-[2d], and [32] analysis above.

Claim 56	
[56] The wireless communication device of claim 44, wherein the site controller is configured to send a command message to the second wireless transceiver, the command message including a "to address" portion, wherein the "to address" portion indicates that the command message is directed toward all remote devices.	*See* [1b], [1e], [1f], [1h], [2a]-[2d], and [33] analysis above.
Claim 57	
[57] The wireless communication device of claim 44, wherein the site controller is configured to send a command message to the second wireless transceiver, the command message controlling an actuator associated with the second remote device.	*See* [3a]-[3c] and [4c] analysis above.
Claim 58	
[58] The wireless communication device of claim 57, wherein the command message controls a change in a current actuator setting of the second remote device.	*See* [3a]-[3c] and [4c] analysis above.
Claim 59	
[59] The wireless communication device of claim 44, wherein a data field of an upstream message identifies a number of upstream repeaters and sets a number of retries by each identified upstream repeater.	*See* [1e], [1f], [2a]-[2d], and [36] analysis above.

Claim 60	
[60] The wireless communication device of claim 44, wherein the first wireless transceiver has two unique addresses comprising a first unique repeater address and a first unique non-repeater address.	*See* [1e], [1f], [2a]-[2d], and [37] analysis above.
Claim 61	
[61] The wireless communication device of claim 60, wherein the first wireless transceiver is configured to substantially repeat messages directed to the first unique repeater address, and is configured to not repeat messages directed to the first unique non-repeater address.	*See* [1e], [1f], [2a]-[2d], and [38] analysis above.
Claim 62	
[62] The wireless communication device of claim 60, wherein the first wireless transceiver is configured to evaluate an incoming message to determine whether the incoming message is directed to the first unique repeater address or is directed to the first unique non-repeater address.	*See* [1e], [1f], [2a]-[2d], and [39] analysis above.
Claim 63	
[63] The wireless communication device of claim 62, wherein the first wireless transceiver is configured to, upon a determination that the incoming message is directed	*See* [1e], [1f], 2a]-[2d], and [40] analysis above.

to the first unique repeater address, substantially repeat the incoming message.	
Claim 64	
[64] The wireless communication device of claim 62, wherein the first wireless transceiver is configured to, upon a determination that the incoming message is directed to the first unique non-repeater address, perform a function according to the incoming message.	*See* [1e], [1f], [2a]-[2d], and [3a]-[3c] analysis above.

V. CONCLUSION

For the foregoing reasons, Petitioner respectfully requests that the *inter partes* review of the '511 patent be instituted as the Petition establishes a reasonable likelihood of prevailing with respect to the challenged claims. Petitioner further respectfully requests that Claims 1-4, 6-11, 27-47, and 51-64 be cancelled as unpatentable under 35 U.S.C. § 318(b).

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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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