

UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT TRIAL AND APPEAL BOARD

MOTOROLA SOLUTIONS, INC.

Petitioner

v.

APPLIED CAPITAL, INC.

Patent Owner

Case No. IPR2023-00418

Patent No. 8,378,817

DECLARATION OF NATHANIEL POLISH

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TABLE OF EXHIBITS

Ex.	Description
1001	U.S. Patent No. 8,378,817 to Rodney Fox (filed January 28, 2010, and issued February 19, 2013) (“ 817 patent ” or “ Challenged Patent ”)
1002	Declaration of Nathaniel Polish in Support of Petition for <i>Inter Partes</i> Review of U.S. Patent No. 8,378,817, with CV attached as Appendix A (“ Polish Decl. ”)
1003	File History of U.S Patent No. 8,378,817 (App. No. 12/695,373) (“ 817 patent File History ”)
1004	U.S. Provisional Application No. 61/147,948 (filed January 28, 2009) (“ January Provisional ”)
1005	U.S. Provisional Application No. 61/228,044 (filed July 23, 2009) (“ July Provisional ”)
1006	Mem. And Order on Claim Construction, <i>Applied Capital, Inc., v The ADT Corp. and ADT LLC</i> , No. 1:16-cv-00815 (Dist. Ct. N.M.) (“ Markman Order ”)
1007	U.S. Patent No. 8,191,005 to John Joseph Baier et al., entitled “Dynamically Generating Visualizations in Industrial Automation Environment as a Function of Context and State Information” (filed Sep. 27, 2007, and issued May 29, 2012) (“ Baier ”)
1008	U.S. Patent Publication No. 2005/0108364 to David M. Callaghan and Brian A. Batke, entitled “System and Methods that Utilize Scalable Vector Graphics to Provide Web-Based Visualization of a Device” (filed as App. No. 10/731,940 on Dec. 10, 2003, and published May 19, 2005) (“ Callaghan ”)
1009	U.S. Patent Publication No. 2002/0161885 to Sloan K. Childers, John Elderton, and Michael Primm, entitled “Methods for Displaying Physical Network Topology and Environmental Status by Location, Organization, or Responsible Party” (filed as App. No. 10/107,962 on Mar. 27, 2002, and published Oct. 31, 2002) (“ Childers ”)

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1010	U.S. Patent Publication No. 2002/0143934 to Geoffrey T. Barker et al., entitled “System and Method for Providing Configurable Security Monitoring Utilizing an Integrated Information System” (filed as App. No. 09/825,506 on Apr. 3, 2001, and published Oct. 3, 2002) (“ Barker ”)
1011	U.S. Patent Publication No. 2007/0290830A1 to Scott A. Gurley, entitled “Remotely Monitored Security System” (filed as App. No. 11/453,646 on Jun. 15, 2006, and published Dec. 20, 2007) (“ Gurley ”)
1012	Siemens Energy & Automation, <i>For remote monitoring, just hook it up and log on</i> , CHEMICAL ENGINEERING, Dec. 2002, at 44D-2
1013	U.S. Patent No. 8,064,412 to Thomas D. Petite, entitled “Systems and Methods for Monitoring Conditions” (filed as App. No. 11/125,009 on May 9, 2005, and issued Nov. 22, 2011) (“ Petite ”)
1014	European Patent No. 1,381,006 to Dietrich Falk et al., entitled “Monitoring System and Monitoring Method” (filed as App. No. 03254377.9 on July 10, 2003, and issued Aug. 23, 2006) (“ Falk ”)
1015	US Patent No. 5,499,196 to Steven M. Pacheco, entitled “Sensor Interface for Computer-Based Notification System” (filed as App. No. 08/139,544 on Aug. 18, 1993, and issued Mar. 12, 1996) (“ Pancheco ”)
1016	U.S. Patent No. 6,281,790 to David E. Kimmel et al., entitled “Method and Apparatus for Remotely Monitoring a Site” (filed as App. No. 09/387,496 on Sep. 1, 1999, and issued Aug. 28, 2001) (“ Kimmel ”)
1017	U.S. Patent No. 7,429,921 to John E. Seeley and Mitchell Black, entitled “Communication system for a Fire Alarm or Security System” (filed as App. No. 11/259,980 on Oct. 27, 2005, and issued Sep. 30, 2008) (“ Seeley ”)
1018	U.S. Patent No. 7,180,420 to Mike Mauer, entitled “System and Method Using Triangulation with RF/LF and Infrared Devices for Tracking Objects” (filed as App. No. 10/853,396 on May 25, 2004, and issued Feb. 20, 2007) (“ Mauer ”)
1019	RFC 791: Internet Protocol, DARPA Internet Program Protocol Specification (September 1981) (<i>retrieved from</i>

	http://web.archive.org/web/20060104025009/https://www.rfc-editor.org/rfc/rfc791.txt) (2006)
1020	U.S. Patent No. 9,728,082 to Rodney Fox (filed Feb. 14, 2013, published June 20, 2013, and issued Aug. 8, 2017) (“ 082 patent ”)
1021	RFC 793: Transmission Control Protocol, DARPA Internet Program Protocol Specification (Sept. 1981) (<i>retrieved from</i> https://web.archive.org/web/20051230005848/https://www.ietf.org/rfc/rfc793.txt) (2005)
1022	U.S. Patent Publication No. 2009/0089709 to John Joseph Baier et al., entitled “Dynamically Generating Visualizations in Industrial Automation Environment as a Function of Context and State Information” (filed Sep. 27, 2007, and published April 2, 2009)
1023	U.S. Patent No. 3,643,170 to Leon J. Stanger, entitled “Envelope Delay Compensation Circuit” (filed as Appl. No. 887,970 on Dec. 24, 1969, and issued Feb. 15, 1972)
1024	RFC 2616: Hypertext Transfer Protocol – HTTP/1.1 (June 1999) (<i>retrieved from</i> https://web.archive.org/web/20051231045808/https://www.ietf.org/rfc/rfc2616.txt) (2005)
1025	GE Security Concord User Instructions (2004)
1026	U.S. Patent No. 7,392,309 to Sloan K. Childers, John Elderton, and Michael Primm, entitled “Methods for Displaying Physical Network Topology and Environmental Status by Location, Organization, or Responsible Party” (filed as App. No. 10/107,962 on Mar. 27, 2002, published Oct. 31, 2002, and issued June 24, 2008)
1027	U.S. Patent No. 726,292 to Edwin T. Holmes, entitled “Burglar-Alarm System” (filed on Jul. 18, 1900, and issued Apr. 28, 1903)
1028	<i>ADT LLC and The ADT Corp. v. Applied Capital, Inc.</i> , IPR2017-01825, Paper 1 (PTAB Jul. 21, 2017) (“ Paper 1 ”)

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1029	<i>ADT LLC and The ADT Corp. v. Applied Capital, Inc.</i> , IPR2017-01825, Paper 7 (PTAB Jan. 24, 2018) (“Paper 7”)
1030	<i>Applied Capital, Inc. v. The ADT Corp. et al.</i> , 1:16-cv-00815, Dkt. 138 (D. N.M. June 17, 2019)
1031	U.S. Patent No. 6,661,340 to Michael J. Saylor, Alison Slavin, and Jean-Paul Hugues Martin, entitled “System and Method for Connecting Security Systems to a Wireless Device” (filed as App. No. 09/840,302 on Apr. 24, 2001, and issued Dec. 9, 2003)
1032	U.S. Patent No. 8,291,309 to David M. Callaghan and Brian A. Batke, entitled “Systems and Methods that Utilize Scalable Vector Graphics to Provide Web-Based Visualizations of Device” (filed as App. No. 10/731,940 on Dec. 10, 2003, and issued Oct. 16, 2012)
1033	File History of U.S Patent No. 9,728,082 (App. No. 13/767,580) (“’082 Patent File History”)

I. INTRODUCTION

1. I, Dr. Nathaniel Polish, make this declaration based upon my own personal knowledge and, if called upon to testify, would testify competently to the matters contained herein.

2. I have been retained on behalf of Motorola Solutions, Inc. (“MSI”) to provide opinions regarding the validity of claims 1-16 of U.S. Patent No. 8,378,817, which I may abbreviate as “the ’817 patent” or refer to as the “Challenged Patent.” I submit this declaration based on my personal knowledge and in support of MSI’s *inter partes* review petition against the ’817 patent.

3. I have been asked to review the Challenged Patent and its prosecution history, to provide an understanding of the technology relevant to the Challenged Patent, and to review certain prior art references. I have been asked to provide my independent analysis as to whether or not claims 1-16 of the Challenged Patent are invalid in light of the cited materials and my knowledge and experience in the field during the relevant period. The opinions stated in this declaration are from the perspective of a person of ordinary skill in the art (POSITA).

4. I am being compensated at my normal rate of \$725 per hour, plus reimbursement for expenses, for my time providing my independent analysis. My

compensation does not depend on the content of my opinions or the outcome of this proceeding.

5. In forming my opinions, I have reviewed the Challenged Patent, its prosecution history and references cited by the Examiner, the materials cited in the List of Exhibits, and the materials cited throughout my declaration. Other than the cited prosecution histories, all citations to exhibits reference original page numbers found in the underlying document, and all emphases have been added.

6. Based on my study, experience, and background discussed below, informed by my extensive experience in the field of networking or monitoring systems, I have concluded that each of Claims 1-16 (**“Challenged Claims”**) of the ’817 patent are invalid based on the following grounds.

Ground	’817 patent Claims	Prior Art References
1	1-16	Anticipation by U.S. 8,191,005 to Baier <i>et al.</i>
2	1-16	Obviousness in view of U.S. 8,191,005 to Baier <i>et al.</i> and the knowledge of a POSITA
3	1-16	Obviousness in view of U.S. 8,191,005 to Baier <i>et al.</i> , in further view of U.S. Pat. Pub. No. 2005/0108364 to Callaghan and the knowledge of a POSITA
4	1-16	Obviousness in view of U.S. Pat. Pub. No. 2002/0161885 to Childers <i>et al.</i> , in further view of U.S. Pat. Pub. No. 2002/0143934 to Geoffrey T. Barker <i>et al.</i> and the knowledge of a POSITA

II. EXPERIENCE AND QUALIFICATIONS

7. I am an independent consultant. I have a Ph.D. in Computer Science from Columbia University. I hold the following four degrees from Columbia:

- Ph.D. in Computer Science, May 1993, Thesis: Mixed Distance Measures for the Optimization of Concatenative Vocabularies in Speech Synthesis;
- M.Phil. in Computer Science, December 1989;
- M.S. in Computer Science, December 1987; and
- B.A. in Physics, Columbia College, May 1984.

8. For over thirty years, I have run a computer technology development firm that I co-founded, called Daedalus Technology Group. My primary business activity is the development of computer-related products. This activity involves understanding the business objectives of customers, designing products to suit their needs, and supervising the building, testing, and deployment of these products. I develop hardware and software as well as supervise others who do so.

9. In 2019 I founded a company called SuperAlert. I am the CEO of that company. I am the main product developer for SuperAlert. SuperAlert is in the business of building and deploying wireless sensors for monitoring systems in large residential buildings. These systems include heating systems, pumps, and hot water

heaters. SuperAlert products utilize low power long range radio signals. The technologies used in these products are similar to those of the patent at issue in this proceeding.

10. Also, from time to time I found other companies in order to pursue particular product opportunities. I develop and ultimately sell these companies. Most of my business activity, however, is as a consulting product developer. From time to time I have also served as an expert witness on computer and software related cases. I am a named inventor on ten United States patents and am a member of several professional societies, including the IEEE and ACM.

11. I have extensive experience in several areas relevant to this case. I have worked for many years on products that utilize digital wireless data transmission. In the early 2000s, my firm under my supervision developed a premises monitoring and security product for a company named Radia. This product monitored industrial facilities under control of rules connected to appropriate surveillance videos.

12. Through these and other experiences, I am very familiar with the technologies at issue in this matter. Therefore, based on my relevant experience, I am an expert in the relevant field of the Challenged Patent at issue here and have been an expert in this field since before the Challenged Patent was filed with the United States Patent and Trademark Office (“USPTO”). I am familiar with how a

POSITA would have understood and used the terminology found in the Challenged Patent at the time of its filing. I also understand and know the capabilities of a POSITA as of the priority date of the Challenged Patent, having worked directly with many such persons in the relevant timeframe.

13. My curriculum vitae and a list of litigation experience in the past four years are attached as Appendix A.

III. LEGAL STANDARDS

A. CLAIM CONSTRUCTION

14. I understand that the first step in determining whether a patent claim would have been anticipated or obvious is to ascertain how a POSITA would have understood the claim terms.

15. I understand that a patent may include two types of claims: independent claims and dependent claims. An independent claim stands alone and includes only the limitations it recites. A dependent claim can depend from an independent claim, or it can further depend from another dependent claim. I understand that a dependent claim includes all the limitations that it recites, in addition to all the limitations recited in the claim(s) from which it depends.

16. It is my understanding that in proceedings before the USPTO, the claims of a patent are to be construed under what is referred to as the “*Phillips*

standard.” I understand that this means that claim terms of a patent are given the meaning the terms would have to a POSITA, in view of the description provided in the patent itself and the patent’s file history.

17. I understand that to determine how a POSITA would understand a claim term, one should look to those sources available that show what a POSITA would have understood the disputed claim language to mean. I understand that, in construing a claim term, one looks primarily to the intrinsic patent evidence, including the words of the claims themselves, the remainder of the patent, and the patent’s prosecution history. I understand that extrinsic evidence, which is evidence external to the patent and the prosecution history, may also be useful in interpreting patent claims.

18. I understand that words or terms should be given their ordinary and accepted meaning unless it appears that the inventors were using them to mean something else. In making this determination, the claims, the remainder of the patent, and the prosecution history are of paramount importance. Additionally, the patent and its prosecution history must be consulted to confirm whether the patentee has acted as its own lexicographer (i.e., provided its own special meaning to any disputed terms), or intentionally disclaimed, disavowed, or surrendered any claim scope.

B. ANTICIPATION

19. It is my understanding that the claims of a patent are anticipated by a prior art reference if each and every element of the claim is found either explicitly or inherently in a single prior art reference. I understand that inherency requires a showing that the missing descriptive matter in the claim is necessarily or implicitly present in the allegedly anticipating reference, and that it would have been so recognized by a POSITA. In addition, I understand that an enabling disclosure is a disclosure that allows a POSITA to make the invention without undue experimentation. Although anticipation typically involves the analysis of a single prior art reference, I understand that additional references may be used to show that the primary reference has enabling disclosure, to explain the meaning of a term used in the primary reference, and/or to show that a characteristic is inherent in the primary reference.

C. OBVIOUSNESS

20. I understand that the prior art may render a patent claim “obvious.” I understand that under the doctrine of obviousness, a claim may be invalid if the differences between the invention and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a POSITA

to which the subject matter pertains. I also understand that a POSITA is not an automaton but is a person having ordinary creativity.

21. For example, I understand that two or more prior art references (e.g., prior art articles, patents, or publications) that each disclose fewer than all elements of a patent claim may nevertheless be combined to render a patent claim obvious if the combination of the prior art collectively discloses all elements of the claim and a POSITA at the time would have been motivated to combine the prior art in such a way. I understand that this motivation to combine need not be explicit in any of the prior art but may be inferred from the knowledge of a POSITA at the time the patent was filed.

22. I further understand that one or more prior art references, articles, patents or publications that disclose fewer than all of the elements of a patent claim may render a patent claim obvious if including the missing element would have been obvious to a POSITA (e.g., the missing element represents only an insubstantial difference over the prior art or a reconfiguration of a known system). For example, I understand that a claim may be deemed invalid for obviousness in light of a single prior art reference, without the need to combine references, if the elements of the claim that are not found in the reference can be supplied by the knowledge or common sense of a POSITA.

23. To assess obviousness, I understand that I am to consider the scope and content of the prior art, the differences between the prior art and the claim, the level of ordinary skill in the art, and any secondary considerations of non-obviousness to the extent they exist. These secondary considerations of non-obviousness may include, for example:

- a long felt but unmet need in the prior art that was satisfied by the claimed invention;
- commercial success of processes claimed by the patent;
- unexpected results achieved by the invention;
- praise of the invention by others skilled in the art;
- the taking of licenses under the patent by others; and
- deliberate copying of the invention.

24. I understand that there must be a nexus between any such secondary indicia and the claimed invention.

25. It is also my understanding that there are additional considerations that may be used as further guidance as to when the above factors will result in a finding that a claim is obvious, including the following:

- the claimed subject matter is simply a combination of prior art elements according to known methods to yield predictable results;
- the claimed subject matter is a simple substitution of one known element for another to obtain predictable results;

- the claimed subject matter uses known techniques to improve similar devices or methods in the same way;
- the claimed subject matter applies a known technique to a known device or method that is ready for improvement to yield predictable results;
- the claimed subject matter would have been “obvious to try” choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- there is known work in one field of endeavor that may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to a POSITA;
- there existed at the time of the invention a known problem for which there was an obvious solution encompassed by the patent’s claims; and
- there is some teaching, suggestion, or motivation in the prior art that would have led a POSITA to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed subject matter.

IV. LEVEL OF ORDINARY SKILL IN THE ART

26. I understand that my assessment of the claims of the ’817 patent and the teachings of the prior art and my analysis and opinions herein must be undertaken from the perspective of what would have been known or understood by a person having ordinary skill in the art, reading the ’817 patent on its priority date and in light of the specification and file history of the ’817 patent. I refer to such a person as a “POSITA.”

27. I further understand that in determining the level of ordinary skill in the art, I am to consider factors including:

- (a) the type of problems encountered in the art or field of invention,
- (b) prior art solutions to those problems,
- (c) the rapidity with which innovations are made,
- (d) sophistication of the technology, and
- (e) the educational level of active workers in the field.

28. I understand that a person of ordinary skill in the art is not a specific real individual, but rather a hypothetical individual having the qualities reflected by the factors above. This hypothetical person has knowledge of all prior art in the relevant field and takes from each reference what it would teach to a person having the skills of a POSITA.

29. I understand that a POSITA is a person of ordinary creativity, but not an automaton, and that a POSITA can often fit multiple patents or prior art references together like pieces of a puzzle as a result of this ordinary creativity. I also understand that I may consider the inferences and creative steps that a POSITA would employ. In addition, I understand that a POSITA would necessarily have been capable of understanding the scientific and engineering principles applicable to the pertinent art.

30. Based on my review and analysis of the '817 patent, the prior art cited herein, and the ordinary skill factors described in this section, in my opinion, a POSITA in the field of the '817 patent at the time of the earliest alleged priority date (January 28, 2009) would have had at least a bachelor's degree in computer science, electrical engineering, or a similar field, and would have had approximately two years industry experience in networking or monitoring systems. Additional education in the fields of electrical engineering or computer science such as a masters or doctorate degree may serve as a substitute for experience in the field. A person with less education but more relevant practical experience may also meet this standard. The prior art also evidences the level of skill in the art.

31. As of January 28, 2009, i.e., the earliest alleged priority date of the '817 patent, I had more than ordinary skill in the art. I am, however, familiar with the skills and knowledge possessed by those I would have considered a POSITA as of that date. When I refer to the understanding of a POSITA, I am referring to the understanding of such a person as of January 28, 2009.

V. KNOWLEDGE OF A POSITA

32. In the subsections below, I describe some of the features of networking and monitoring systems that would have been well known to a POSITA as of January

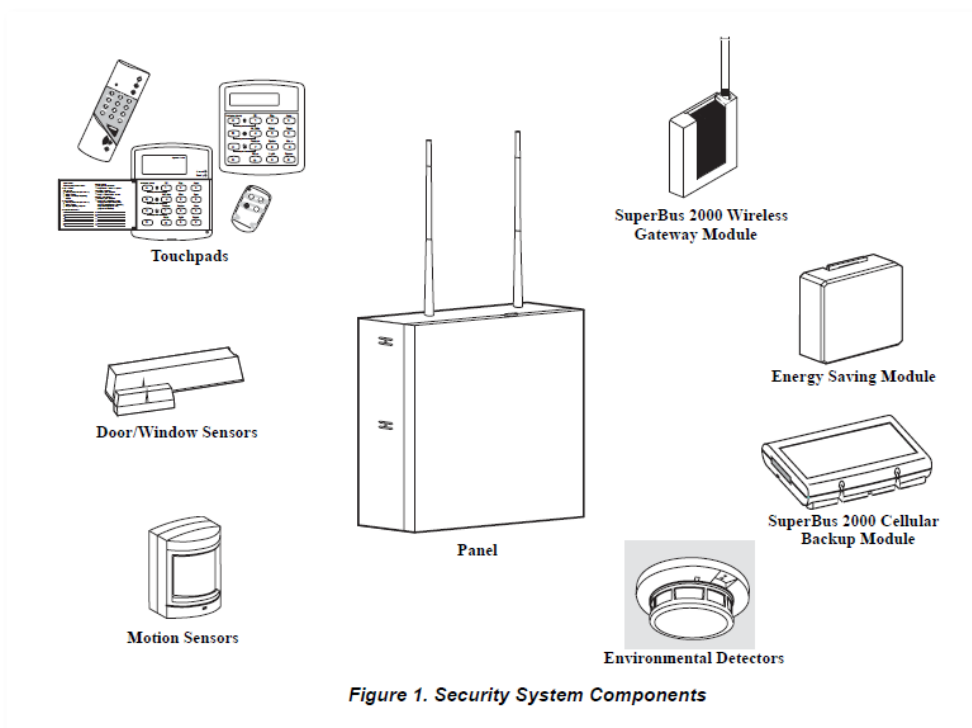
28, 2009. As discussed below, it is my opinion that the claims of the '817 patent were already known and obvious in light of the prior art that came before it.

A. REMOTE MONITORING SYSTEMS

33. By 2009, the field of networking and monitoring systems, including remote monitoring systems, was crowded. Indeed, as early as 1903, Edwin T. Holmes received a patent that involves using a phone line to connect premises to a central office for monitoring. Ex. 1027 (U.S. Patent No. 726,292, entitled “Burglar-Alarm System”). Remote monitoring systems connected over the Internet became commonplace decades ago. Such systems allowed relevant entities to monitor numerous sites without being present at the site, receive information about relevant alarms and events, and log and respond to events across the facilities. These systems had numerous applications—from access control to security systems to industrial control.

34. As just one example, between 2002 and 2004, my own firm, Daedalus Technology Group, built an off-site monitoring and alarm system using video and photos and a wide variety of sensors. By that time numerous other companies had developed and published papers relating to remote monitoring systems for consumers or businesses.

35. For example, companies like GE have for years sold remote monitoring systems to consumers for security. A user guide from 2004 describing the “Concord” system shows one such example. Ex. 1025. As shown below, the GE product operated as a security system with many potential sensors, and a panel to “monitor all the sensors and device in the system” and to “initiate[] a call to the central station in an alarm situation.” Ex. 1025 at 1. The system allowed for “control and status monitoring” “through the internet.” *Id.* at 2.



36. Other companies developed remote monitoring systems for industrial control. For example, by 2002, Siemens Energy & Automation released its “Instruwatch Remote Monitoring System,” which allowed for remotely checking

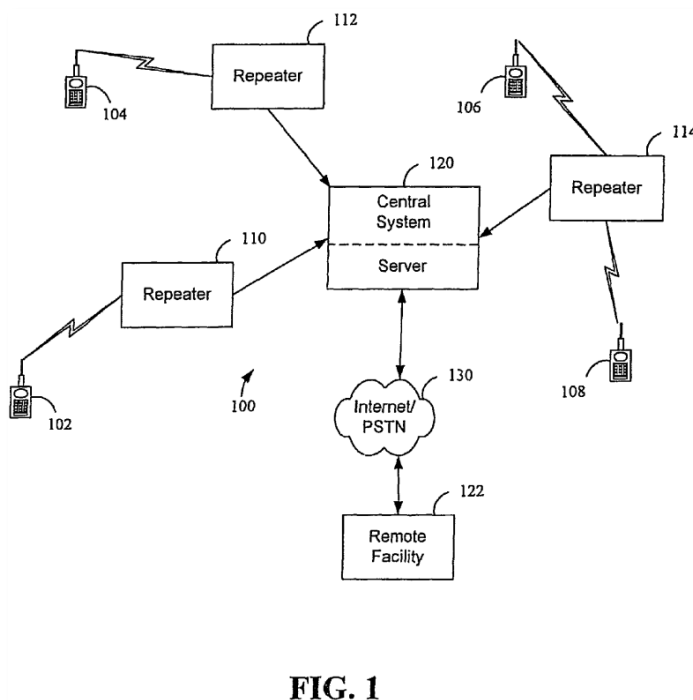
inputs from industrial equipment and “provid[ing] automatic notifications of alarm events.” Ex. 1012 at 44D-2. Likewise, as I will describe further below, Rockwell Automation developed sophisticated remote monitoring systems for industrial controls as early as 2003. *See* Ex. 1008 (Callaghan); *see also* Ex. 1007 (Baier), Ex. 1032.

37. In short, by 2009, “[i]t ha[d] become common to use a variety of electronic devices to provide security and monitoring within and around the home, office, or other premises” and to connect those devices to a remote monitoring service. Ex. 1011 at [0004]. By that time, a POSITA would have known that such systems typically had certain obvious features. These included (1) the ability to receive signals from remote devices identifying the device and its alarm (*e.g.*, fire alarm triggered); (2) the ability to represent the alarm (*e.g.*, as a map with an icon representing the fire alarm); and (3) the ability to determine which entities should be notified (*e.g.*, building owner) and how they should receive it (*e.g.*, text message). I discuss each of these features below—all were well known as of 2009.

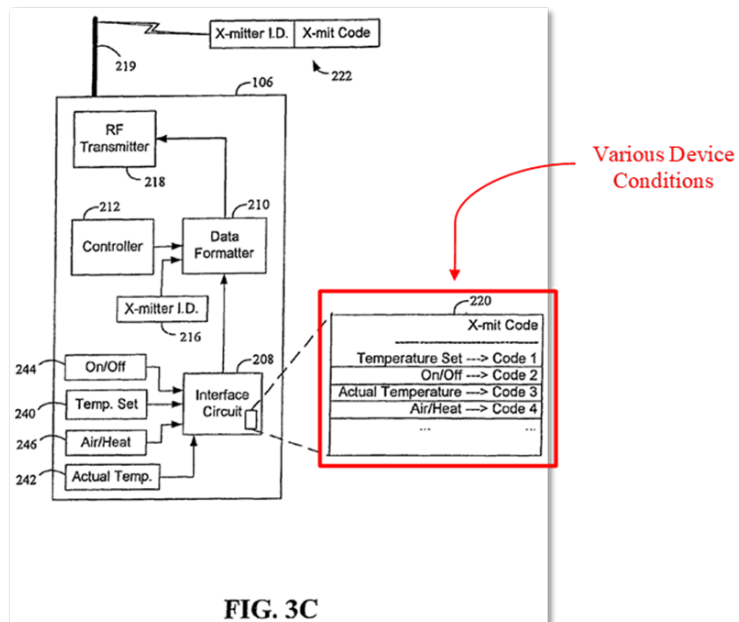
B. RECEIVING A DEVICE IDENTIFICATION AND A DEVICE CONDITION

38. Numerous examples of systems that received a device identifier and device condition existed by 2009. I describe just a few in this subsection.

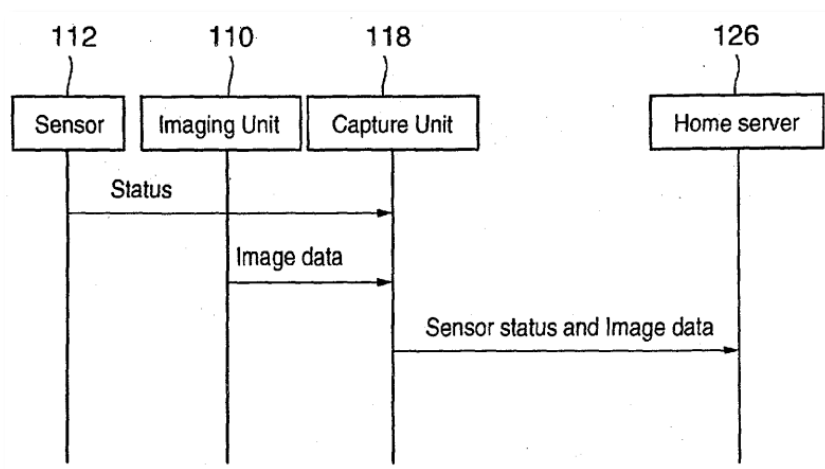
39. For example, U.S. Patent No. 8,064,412 (Exhibit 1013, “Petite”), which was filed and published in 2005, discloses a monitoring device with a remote transmitter sending a signal to a central server. *See* Ex. 1013 at FIG.1.



The signal contains at least a transmitter “identification code” for the device and “transmitter codes” that provide the central server with status indications. *Id.* at 10:21-12:3. Figure 3C, for example, shows the identification code for a device integrated into a thermostat and the transmitter codes, indicating a variety of statuses such as set temperature, actual temperature, mode, and power. Ex. 1013 at FIGs.3B-C; *see also id.* at 10:21-12:3.



40. Similarly, European Patent App. No. 1,381,006 (Exhibit 1014, “Falk”), which was filed in 2003 and published in 2004, discloses sending status information from a remote sensor to a server that interprets and acts on that information. Ex. 1014 at FIG.2:



41. In addition, as I describe in detail in Section IX and Section X, systems developed by Rockwell Automation and others all disclose the same functionality of sending a device identifier and device condition to a central server. There was nothing novel or non-obvious about such functionality by 2009.

C. **REPRESENTING THE DEVICE AND DEVICE CONDITION**

42. In 2009, it was also typical that a central server for receiving a device identifier and condition must also determine how to represent the device and device condition for a user, *e.g.*, graphically, written, through a communication link. By that time, a POSITA could have selected from a set of predictable, well-known, and previously deployed options for displaying such information.

43. For example, one simple option would have been for “monitoring stations” to provide “binary on/off alert information to the user...[f]or example, an indicator, such as a lamp or audible output, is on when a particular sensor is tripped, and is off when the sensor is reset.” Ex. 1016 at 1:16-23. By 2009, there was nothing new or non-obvious about sending an audible alert.

44. As another example, it was also well-known to provide data files, messages, maps and other graphical displays showing the location and status of the device, together with an audible alert. For example, U.S. Patent No. 5,499,196 (Exhibit 1015, “Pancheco”), filed nearly 30 years ago discloses that “the user creates

a data file at a selected location in memory,” then “when an alarm condition is detected for the sensor corresponding to the particular sensor setup...the data stored at the location” would be sent by facsimile “to any person designated on the list.” Ex. 1015 at 14:16-59.

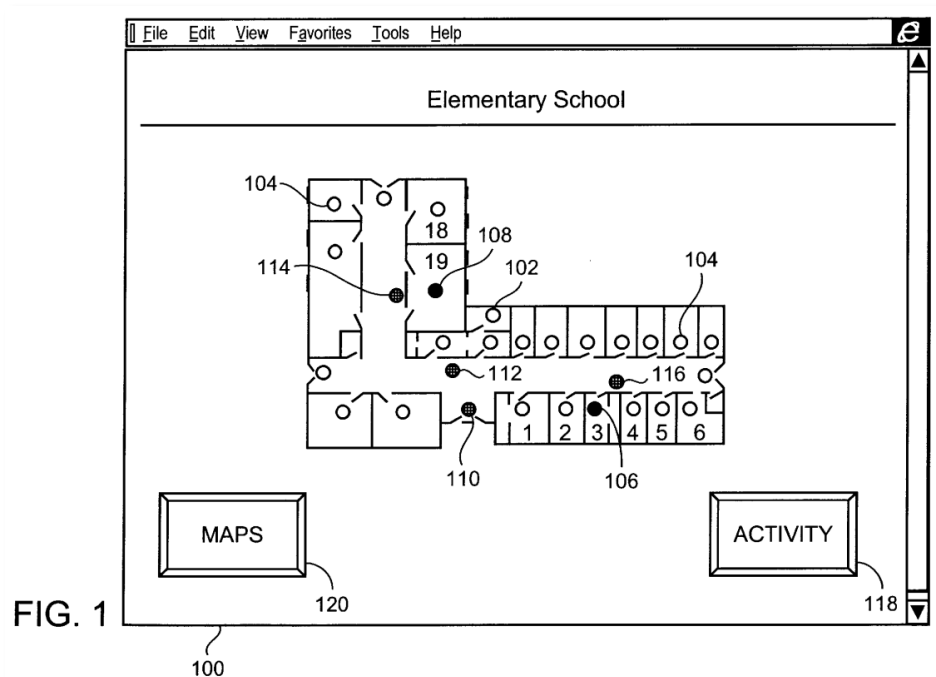
45. Similarly, U.S. Patent No. 6,281,790 (Exhibit 1016, “Kimmel”), filed over 20 years ago, discloses that “[i]n both security and fire monitoring, embedded maps” “assist in getting response units quickly to the scene.” Ex. 1016 at 6:46-48. In Kimmel, these maps are stored on a host computer and can be accessed by a remote computer to help monitor the area or respond to an alarm. Ex. 1016 at 6:57-7:37.

46. These examples illustrate that, by 2009, it had been well-known for decades that information, including graphical imagery, could be stored and retrieved for particular devices and particular conditions. There was nothing novel or non-obvious about such functionality by 2009. Below I provide further examples of specific and well-known options for graphical elements to represent a device and device condition that would have been available and obvious to a POSITA by 2009.

a. Superimposed Visual Indicators

47. The practice of superimposing various visual indicators—such as icons—on graphics was well-known in the art prior to 2009 and one available and predictable option for a POSITA for representing a device and a device condition.

48. For example, Kimmel discloses “icons overlaid” on a “bitmap to identify” “sensors and their status” and “represent a condition of each sensor,” “wherein said condition can be...an indication that a sensor is in an alarm condition.” Ex. 1016 at cls. 5-7. These superimposed visual indicators are depicted in Figure 1 (below) which “shows an exemplary graphics screen viewed through a security panel web page, wherein the graphics display contains a floorplan layout, with special icons over laid on a bitmap to identify sensor points and their status.” Ex. 1016 at 3:26-29.



49. As another example, U.S. Patent No. 7,429,921 (Exhibit 1017, “Seeley”), which was filed in 2005, is a typical alarm and security system. In Seeley, when a sensor in the system alarms, database provides new floorplan graphics to responders: “[w]hen a sensor goes into alarm, the representation is immediately changed to highlight the sensor and its location,” for example, via a “greatly enlarged circle whose color has changed from green to red” or “yellow.” Ex. 1017 at 7:56-67. Figure 4D (below) shows indicators representing smoke/fire detectors and motion sensors (P1-P13) superimposed on a floorplan:

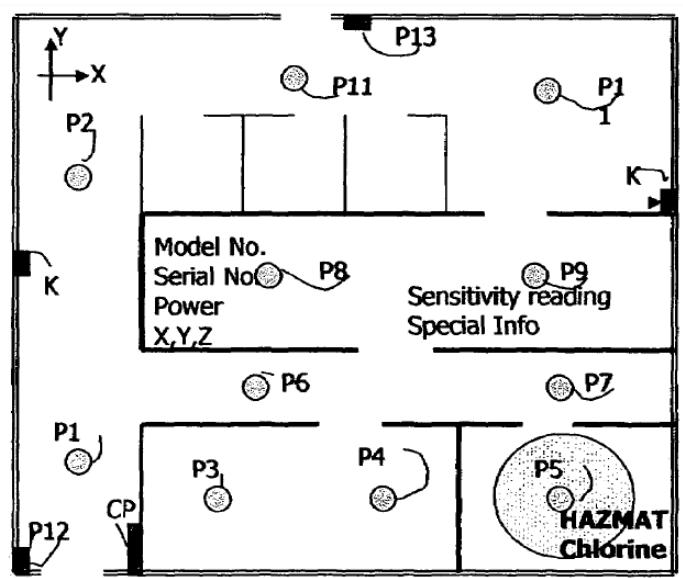


Figure 4D

50. Further, U.S. Patent No. 7,180,420 (Exhibit 1018, “Mauer”), which was filed in 2004 and published in 2005, also discloses floorplans with superimposed icons representing sensors. For example, in Figure 4 (below), “[v]ector floor plan 300 shows a circle labeled ‘TP 304’ that represents a test spot where someone pressed a panic button on transponder 102. The circle labeled ‘A’ 302 represents where central computer 125 indicated the location of transponder 102 was on vector floor plan 300.” Ex. 1018 at 8:67-9:4.

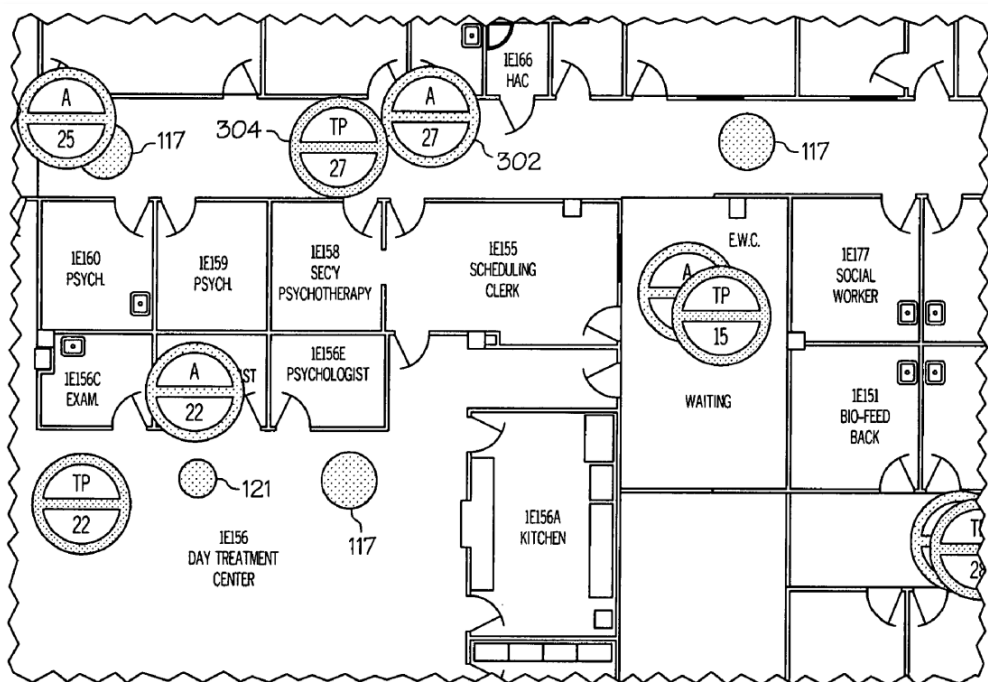


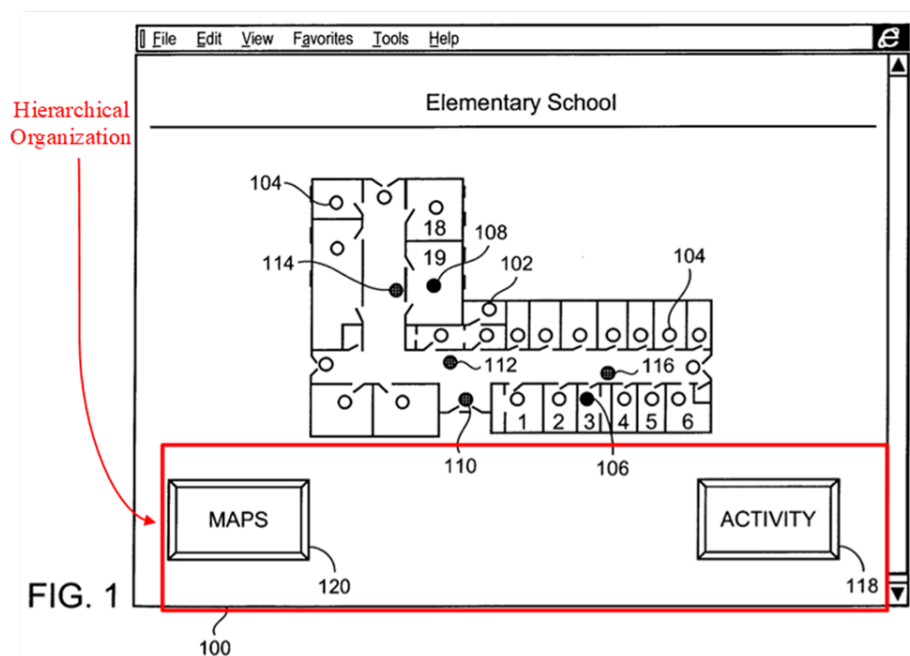
FIG. 4

b. Hierarchically Organized Graphics

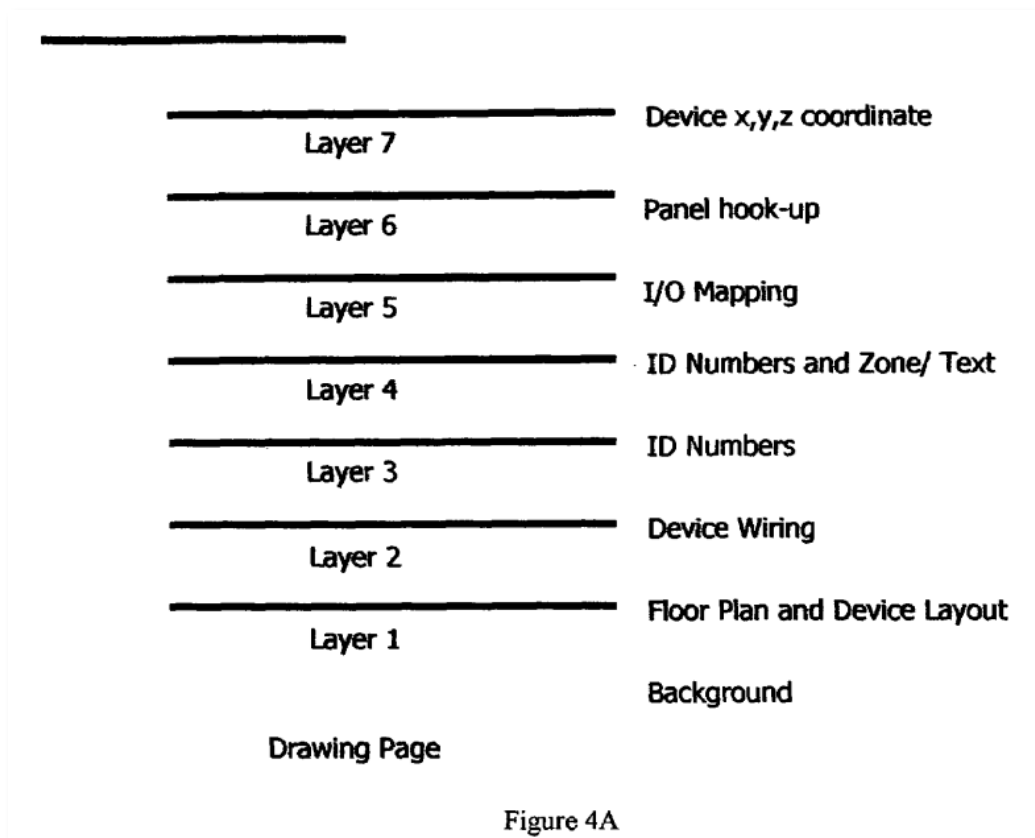
51. The practice of organizing and displaying data in a hierarchical format—such that, for example, clicking on one image brings up another image—was another well-known, available and predictable option for a POSITA for representing a device and a device condition before 2009.

52. For instance, Kimmel discloses a “MAP” icon, which, when clicked, provides first responders access to “maps showing directions to the facility.” Ex. 1016 at 6:16-18. As Kimmel describes, “[i]n both security and fire monitoring, embedded maps accessed via the MAPS icon 120 assist in getting response units

quickly to the scene.” Ex. 1016 at 6:46-48. Kimmel’s MAP icon is shown in Figure 1 below.



53. As another example, Figure 4A of Seeley depicts the layers of data, hierarchically organized, from device coordinates to floor plan, that can be combined to display a particular device, with a particular condition, on a map. Ex. 1017 at FIG.4A:



54. By 2009, “hierarchically organized” images, such as icons that a user can select to bring up another image, were commonplace. I provide additional examples in my discussion of the prior art below.

c. Vector-Based Graphics

55. Displaying images including a vector to allow for magnification of an image without degradation was also well known, available, and predictable option for a POSITA in 2009.

56. For example, vector plots had been known for decades. *E.g.*, Ex. 1023 at 2:65-68, FIG. 2 (vector plots representing graphs of voltages described in a 1969

patent application). Vector plots allow magnification of an image without degradation and were often used for displaying geometric, non-photographic information. Vector plots also can be stored in relatively small-sized files, such as Scalable Vector Graphics (SVG) files making them suitable for low-bandwidth communications.

57. Vector plots were used frequently by 2009 for representing a map. For example, Mauer describes “a vector floor plan.” Ex. 1018 at cl. 3. As Mauer describes, “[u]sing a vector graphics displayer, even huge floor plans in multi-building sites can be zoomed in upon to see extensive detail—even room labels can be read on surrounding rooms.” Ex. 1018 at 3:39-42. As another example, U.S. Patent No. 8,291,309 (Exhibit 1032), filed nearly 20 years ago in 2003, discloses using “Scalable Vector Graphics” in industrial control systems to represent “device graphics as well as text within a file” which can be retrieved by a remote user while being “resolution independent.” Ex. 1032 at 10:54-11:5; *see also* Ex. 1008.

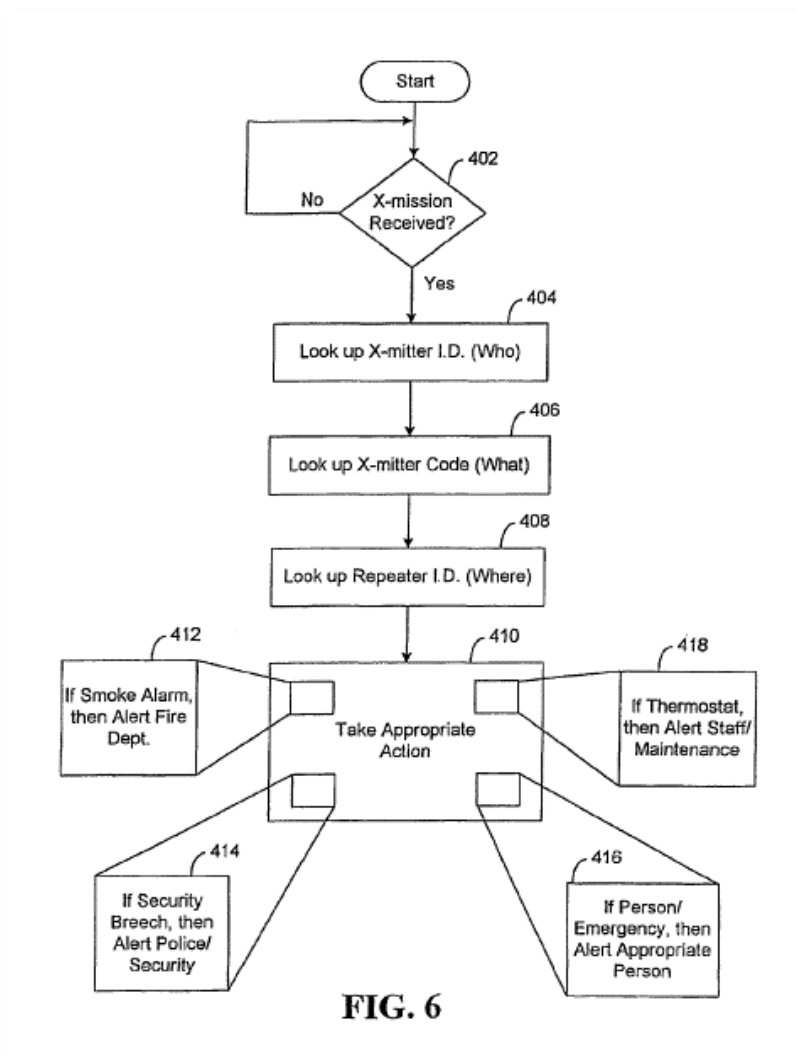
58. In summary, a POSITA would have recognized several known and predictable options for representing device and device conditions of a remote monitoring system. The selection of one option or the other would have been a

simple matter of design choice for a POSITA, depending on the application, the availability of memory to store varying resolutions, the computational resources.

D. COMMUNICATION METHOD AND COMMUNICATION DESTINATION

59. Another core concept in remote monitoring systems was the ability for the system to identify a destination and method of communicating each alarm received—for example, who to notify of that alarm (*e.g.*, homeowner) and how to notify them (*e.g.*, phone or text).

60. Numerous systems described such functionality before 2009. For example, Petite describes that, based on the received device identifier and condition, a central server determines a communication destination (*e.g.*, fire department or homeowner) and a communication method (*e.g.*, call or page or email). Ex. 1013 at 15:29-60, 2:55-64, FIG.6.



61. Falk similarly describes determining the appropriate contact instructions and notification methods based on a received alarm signal. For example, when Falk's system receives an input signal from a sensor that "is indicating an alarm status" which requires a notification, "an alarm notification is transmitted to the security server 136 with contact instruction as well as the corresponding image

data if applicable,” determined from “the notification rule” associated with that alarm status. Ex. 1014 at [0058]-[0059]; FIG.6.

62. As another example, in Seeley, when a sensor in the system alarms, it sends a signal to a remote processing station, which checks a database for “contact information for who gets notified, in what order they are notified (e.g., responders first, then facility management, then the insurance carrier), what information about the current alarm is each contact to be provided, what historical information about the facility and any previous alarms is to be provided, etc.” Ex. 1017 at 6:29-34.

63. The functionality in these references reflects typical systems as of 2009—if an alarm is received, a central server will determine the destination for it and the method for communicating it. There was nothing novel or non-obvious about such functionality by 2009.

VI. OVERVIEW OF THE CHALLENGED PATENT

A. PRIORITY DATE

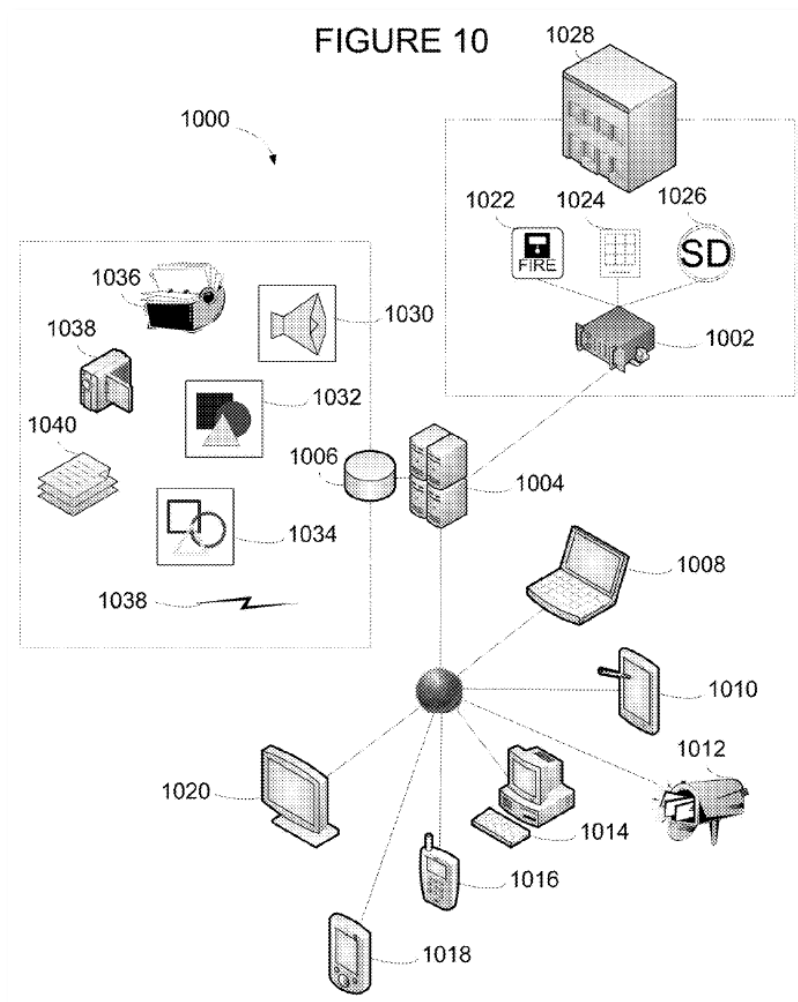
64. The '817 patent claims priority to two provisional applications (Ex. 1004 and Ex. 1005, filed January 28, 2009, and July 23, 2009, respectively). For purposes of this proceeding, I have assumed the priority date of the '817 patent is the earliest provisional date and have applied this date in considering the prior art and the viewpoint of a POSITA.

B. THE SUBJECT MATTER OF THE CHALLENGED PATENT

65. The '817 patent is titled “Premises Monitoring System” and “relates generally to computer systems, and more specifically, to a premise monitoring system.”¹ Ex. 1001 at 1:13-14.

66. As shown in Figure 10, below, the '817 patent discloses a premises monitoring system (1004) that (1) receives “one or more signals containing one or more device identifiers and one or more device conditions” such as from a fire alarm, smoke alarm, or a security detector; (2) “retrieve[s]” so-called “enhanced information” (*e.g.*, image data) from a data store (1006) based on the device identifier and device condition; and (3) “determine[s] one or more communication methods and one or more communication destinations,” including laptops (1008), computers (1014), or displays (1020), from the same data store (1006) based on the device identifier and device condition. *Id.* at 2:15-35.

¹ The '817 patent refers to an “Appendix A,” which appears to be a portion of the prosecution history. Ex. 1001 at 1:56-57; Ex. 1003 at 199-411.



67. The patent purports to improve on prior systems because the enhanced information “can come from anywhere” (such as the data store 1006 rather than directly from the alarm) via the internet and allows a user to “retrieve” the information “when they choose to do so.” Ex. 1003 at 55; Ex. 1001 at 2:10-15. Thus, according to the applicants, the alleged invention would cover the basic process of “email[ing]” an “Adobe PDF” to a first responder with superimposed

visual indicators (icons) that are hierarchically organized (arranged relative to each other) when the first responder requests the information. Ex. 1003 at 55.

68. Nothing in this system or use-case was novel or non-obvious by 2009. The system is admittedly generic and could apply to any premises. Ex. 1001 at 17:50-53. The alarm signal could come from any known device, such as a smoke detector or security detector. *Id.*, 2:4-49, 2:62-3:5. The alarm could be represented with any “icons” arranged relative to each other on a “floor plan.” *Id.*, 5:1-6:3. The communication destination and method could be any interested user of the system using known communication devices and protocols (*e.g.*, “a staff” or “a supplier” using a laptop to receive email). *Id.*, 2:23-27, 9:39-54, 10:13-11:31. None of the claimed features—individually or in combination—was new. In my opinion, the ’817 patent combines known operations of a known remote monitoring system in a known and obvious way.

C. **THE CHALLENGED CLAIMS OF THE ’817 PATENT**

69. Claims 1-16 of the ’817 patent (“Challenged Claims”) are set forth below. Some of the claim elements have been further sub-divided for ease of reference.

Claim Element	Claim Language from '817 patent
1(pre)	A method comprising:
1(a)	receiving one or more signals containing a device identifier and a device condition from one or more remote alarm monitoring systems
1(b)	retrieving enhanced information based on the device identifier and the device condition;
1(c-1)	determining one or more communication methods and communication destinations based on the device identifier and the device condition; and
1(c-2)	dispatching the enhanced information to the one or more communication destinations using the one or more communication methods; and
1(d-1)	wherein the retrieving enhanced information based on the device identifier and the device condition comprises retrieving images based on the device identifier and the device condition, the images comprising all of the members selected from the group consisting of
1(d-2)	superimposed visual indicators,
1(d-3)	hierarchically organized graphical images, and
1(d-4)	vector-based graphical images.
2	The method of claim 1, wherein the receiving one or more signals containing a device identifier and a device condition from one or more remote alarm monitoring systems comprises: receiving one or more signals containing a device identifier for a smoke detector, a pull station, a security detector, a carbon monoxide detector, and a check-in monitor from one or more remote alarm monitoring systems.
3	The method of claim 1, wherein the receiving one or more signals containing a device identifier and a device condition from one or

Claim Element	Claim Language from '817 patent
	more remote alarm monitoring systems comprises: receiving one or more signals containing a device condition of normal, fault, and supervisory from one or more remote alarm monitoring systems.
4	The method of claim 1, wherein the retrieving enhanced information based on the device identifier and the device condition comprises: retrieving enhanced information including one or more sounds based on the device identifier and the device condition.
5	The method of claim 4, wherein the retrieving enhanced information including one or more sounds based on the device identifier and the device condition comprises: retrieving enhanced information including one or more sounds organized on one or more graphical images based on the device identifier and the device condition.
6	The method of claim 1, wherein the retrieving enhanced information based on the device identifier and the device condition comprises: retrieving enhanced information including one or more communication links based on the device identifier and the device condition.
7	The method of claim 6, wherein the retrieving enhanced information including one or more communication links based on the device identifier and the device condition comprises: retrieving enhanced information including one or more communication links organized on one or more graphical images based on the device identifier and the device condition.
8	The method of claim 1, wherein the retrieving enhanced information based on the device identifier and the device condition comprises: retrieving enhanced information including written information based on the device identifier and the device condition.
9	The method of claim 8, wherein the retrieving enhanced information including written information based on the device identifier and the device condition comprises: retrieving enhanced information

Claim Element	Claim Language from '817 patent
	including date/time information, account information, premises information, device information, condition information, support information, contact information, linked information, and instructional information based on the device identifier and the device condition.
10	The method of claim 8, wherein the retrieving enhanced information including written information based on the device identifier and the device condition comprises: retrieving enhanced information including written information organized on one or more graphical images based on the device identifier and the device condition.
11	The method of claim 1, wherein the determining one or more communication methods and communication destinations based on the device identifier and the device condition comprises: determining one or more communication methods of email, text message, instant message, website link, phone, and mail based on the device identifier and the device condition.
12	The method of claim 1, wherein the determining one or more communication methods and communication destinations based on the device identifier and the device condition comprises: determining one or more device communication destinations of a personal computer, a phone, a mobile device, a display, and a custom device based on the device identifier and the device condition.
13	The method of claim 1, wherein the determining one or more communication methods and communication destinations based on the device identifier and the device condition comprises: determining one or more entity communication destinations of an authority, a first responder, a service company, an owner, a manager, a staff, an occupant, a supplier, a customer, a neighbor, and a custom entity based on the device identifier and the device condition.
14	The method of claim 1, wherein the dispatching the enhanced information to the one or more communication destinations using the

Claim Element	Claim Language from '817 patent
	one or more communication methods comprises: dispatching the enhanced information automatically without requiring operator intervention to the one or more communication destinations using the one or more communication methods.
15	The method of claim 1, further comprising: receiving enhanced information, one or more communication methods, and one or more communication destinations via a user interface that is remotely accessible.
16	The method of claim 1, further comprising: receiving one or more communication methods and one or more communication destinations from data of a personal device.

D. PROSECUTION HISTORY OF THE '817 PATENT

70. What ultimately issued as the '817 patent was filed on January 28, 2010, as Application No. 12/695,373. The application was originally filed with 20 claims: independent claim 1, and dependent claims 2-20 (depending from claim 1). Ex. 1003, '817 patent File History.

71. The Examiner rejected all originally filed claims as obvious. Ex. 1003 at 05/18/2012 Office Action, at 64-100. To overcome these rejections, applicants amended claim 1 to recite the features previously found in claims 4-7, and specifically added the requirement that the “images comprising all of the members selected from the group consisting of superimposed visual indicators, hierarchically

organized graphical images, and vector-based graphical images.” *Id.* at 9/25/2012

Amendment and Remarks, at 50-57. These amendments are shown below.

1. (Currently Amended) A method comprising: receiving one or more signals containing a device identifier and a device condition from one or more remote alarm monitoring systems; retrieving enhanced information based on the device identifier and/or the device condition; determining one or more communication methods and/or communication destinations based on the device identifier and/or the device condition; and dispatching the enhanced information to the one or more communication destinations using the one or more communication methods; <u>and</u> <u>wherein the retrieving enhanced information based on the device identifier and/or the device condition comprises retrieving images based on the device identifier and/or the device condition, the images comprising all of the members selected from the group consisting of superimposed visual indicators, hierarchically organized graphical images, and vector-based graphical images.</u>

Id.

72. Applicants also argued that “[p]rior to the present invention, information made available by a reporting system was generated by the system itself. With the present invention, there are no limitations on the type and/or source of information made available to the responder,” “[i]t can come from anywhere via an internet or networked connection or combination thereof,” and a responder can retrieve details “when they choose to do so.” *Id.* at 55. As I describe further below, the prior art cited herein discloses these same allegedly novel features.

73. On December 11, 2012, the Examiner allowed claims 1-3 and 8-20, but included an Examiner’s Amendment which changed all instances of “and/or” to

“and,” as shown for example below. *Id.* at 12/11/2012 Notice of Allowance, at 26-27.

<u>Amendment to the claims</u> 1. (Currently Amended) A method comprising: receiving one or more signals containing a device identifier and a device condition from one or more remote alarm monitoring systems;
retrieving enhanced information based on the device identifier <u>[[and/or]] and the device condition;</u> determining one or more communication methods <u>[[and/or]] and</u> communication destinations based on the device identifier <u>[[and/or]] and the device condition;</u> and dispatching the enhanced information to the one or more communication destinations using the one or more communication methods; and <u>wherein the retrieving enhanced information based on the device identifier [[and/or]] and the device condition comprises retrieving images based on the device identifier [[and/or]] and the device condition, the images comprising all of the members selected from the group consisting of superimposed visual indicators, hierarchically organized graphical images, and vector-based graphical images.</u>

Id.

E. SUMMARY OF *INTER PARTES* REVIEW, IPR2017-01825

74. On July 21, 2017, ADT LLC and the ADT Corporation (collectively, “ADT”) filed a Petition for *Inter Partes* Review of claims 1-4 and 6-16 of the ’817 patent. Ex. 1028, IPR2017-01825, Paper 1. ADT’s Petition asserted two obviousness grounds, both of which relied on U.S. Patent No. 6,661,340 to Saylor (“Saylor,” Ex. 1031) as the primary reference. Ex. 1028 at 16. The Board issued a

Decision Denying Institution on January 24, 2018. The Board provided three reasons for its decision. Ex. 1029, IPR2017-01825, Paper 7 at 13-17.

75. First, the Board found the Petition “addresse[d] only whether the ‘communication method’ is based on the device identifier and condition” but was “silent regarding whether the ‘communication destination’ is based on the device identifier and condition.” *Id.* at 13.

76. Second, the Board found that the Petitioner had “conflate[d] two separate functionalities of Saylor.” *Id.* at 14. Specifically, for the “dispatching” step, Board concluded that the Petition relied on Saylor’s “‘personal report’ functionality, which allows the user at any time to log into a website to create and view reports.” *Id.* However, for the “determining step,” the Board concluded that the Petition relied on Saylor’s “‘notification’ functionality, which allows the user to decide who gets notified...and how...when an alarm event occurs.” *Id.* Because the Petition had not explained why a POSITA would have combined the personal report functionality and notification functionality to “allow the user to set a preference to be notified via the web,” the Board found there was not sufficient support in the record for such a combination. *Id.* at 15.

77. Finally, the Board found that the Petition “fail[ed] to explain sufficiently whether Saylor would have taught or suggested ‘determining one or

more...communication destinations based on the device identifier and condition.” *Id.* at 16 (emphasis in original). As the Board found, Saylor’s reports could be accessed by any computer, not just the “personal computer 242” identified by the Petition, so the “personal computer 242” is determined “based on the user logging into the website from that particular computer, not ‘based on the device identifier and the device condition.’” *Id.*

VII. CLAIM CONSTRUCTION

78. I understand that certain claim terms of the ’817 patent were construed by the District Court for the District of New Mexico on August 12, 2019, in a litigation filed by Patent Owner against The ADT Corporation and ADT LLC, Civil Action No. 1:16-cv-00815 (hereinafter, “ADT Matter”). *See* Ex. 1006 (*Markman* Order). I summarize the construction from the ADT Matter below.

79. The prior art discussed herein discloses the Challenged Claims under any reasonable construction or any of the court’s constructions in the ADT Matter.

A. ADT MATTER CONSTRUCTIONS - INDEPENDENT CLAIM 1

80. For the term “*superimposed visual indicators*,” the parties agreed that no construction was necessary. Exhibit 1006 (*Markman* Order) at 8.

81. For the term, “***hierarchically organized graphical images***,” the parties agreed to the construction of “a group of graphical images arranged relative to one another and/or accessible through one another.” *Id.*

82. For the term “***vector-based graphical images***,” the court adopted ACI’s proposed construction of “images that include one or more vectors.” The court rejected ADT’s proposed construction of the term to mean “vector image files.” *Id.* at 9-10.

83. For the term “***determining one or more communication methods and communication destinations based on the device identifier and the device condition***,” the Court stated: “both the communication methods and communication destinations must be determined based on the device identifier and the device condition, but this does not mean that the steps need to be performed separately.” *Id.* at 10-11. “Accordingly, the court finds no construction is necessary.” *Id.* at 11.

84. The court also determined that no construction was necessary for the term:

“dispatching the enhanced information to the one or more communication destinations using the one or more communication methods; [and] wherein the [retrieving] enhanced information based on the device identifier and the device condition comprises [retrieving] images based on the device identifier and the device condition, the images comprising all of the members selected from the group consisting of superimposed visual indicators, hierarchically organized graphical images, and vector-based graphical images”

The court also stated that “[t]his language suggests that the task could be performed in one step” and that “[n]othing in the intrinsic record justifies interpreting this language to require three separate image retrieval steps.” *Id.* at 11-12.

B. ADT MATTER CONSTRUCTIONS - DEPENDENT CLAIMS

85. ***Dependent claim 9:*** The court found that no construction was necessary for the following term in dependent claim 9:

“wherein the retrieving enhanced information including written information based on the device identifier and the device condition comprises: retrieving enhanced information including date/time information, account information, premises information, device information, condition information, support information, contact information, linked information, and instructional information based on the device identifier and the device condition” + “dispatching the enhanced information to the one or more communication destinations using the one or more communication methods”

In doing so, the court stated that, unlike claim 1’s use of “*all of*” to indicate each type of information was required, claim 9 “uses the open-ended term of art ‘comprises’ as an antecedent to the list” and thus “[t]he absence of that limiting language indicates that the claim should not be read as requiring the retrieval of all of the information recited.” *Id.* at 13-14.

86. ***Dependent claim 2:*** The court found that no construction was necessary for the following term in dependent claim 2:

“receiving one or more signals containing a device identifier for a smoke detector, a pull station, a security detector, a carbon monoxide detector, and a check-in monitor from one or more remote alarm monitoring systems”

The court specifically noted that the claim includes the phrase “one or more,” rather than “all of” like claim 1 and concluded that “[n]othing in the intrinsic record supports requiring the receipt of five separate devices’ specific signals.” *Id.* at 14-15.

87. ***Dependent claims 11-13:*** The court found that no construction was necessary for the following terms in dependent claims 11-13:

Claim 11: “determining one or more communication methods of email, text message, instant message, website link, phone, and mail based on the device identifier and the device condition”

Claim 12: “determining one or more device communication destinations of a personal computer, a phone, a mobile device, a display, and a custom device based on the device identifier and the device condition”

Claim 13: “determining one or more entity communication destinations of an authority, a first responder, a service company, an owner, a manager, a staff, an occupant, a supplier, a customer, a neighbor, and a custom entity based on the device identifier and the device condition”

The court specifically rejected ADT’s proposal to “require a determining step for all” recited methods and destinations, noting that the phrase “one or more” is determinative of the issue. *Id.* at 15.

VIII. OVERVIEW OF THE PRIOR ART

A. BAIER (EX. 1007)

a. Status of Baier

88. U.S. Patent No. 8,191,005 to Baier (“Baier”) is entitled “Dynamically Generating Visualizations in Industrial Automation Environment as a Function of Context and State Information.” Baier was filed September 27, 2007, published April 2, 2009,² and issued May 29, 2012. As such, I understand Baier is prior art under at least 35 U.S.C. § 102(e).

b. Overview of the Disclosure of Baier

89. Baier provides a “visualization system” “that more efficiently communicate[s] data to users in an industrial control system,” including data relating to “industrial processes, manufacturing equipment, and other factory automation.” Ex. 1007 at 6:60-67, 3:22-24, 1:18-21. The components of Baier’s visualization system can “communicate and cooperate with various network devices across a

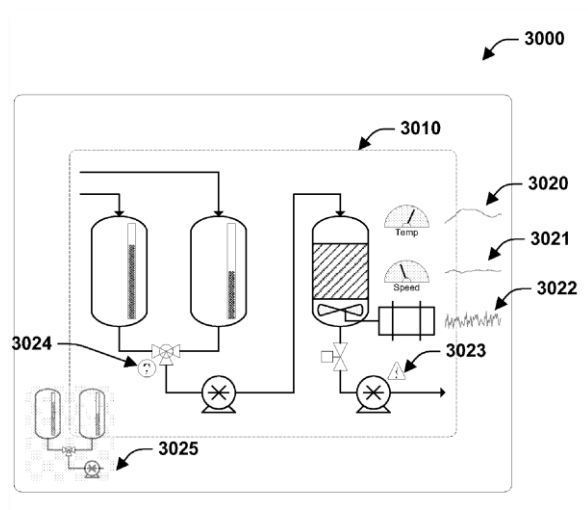
² The application that led to the Baier patent was published as U.S. Pat. Pub. No. 2009/0089709 on April 2, 2009. The specification of the publication is substantively identical to the specification of the patent, and thus I understand it provides §112 support for the Baier patent. *Compare* Ex. 1007, *with* Ex. 1022. Additionally, the Baier publication is also prior art under at least 35 U.S.C. § 102(e). Although my opinions herein are stated with reference to the Baier patent, they apply equally to the Baier publication.

network,” such as the Internet. *Id.* at 6:12-16, 6:24-36. Typically, industrial control systems retrieve “input data” from devices and “format[], and/or communicate[] output data” for a user, providing a “Graphical User Interface,” for example, using “pop[] up” alarm displays or “alarm summar[ies].” *Id.* at 5:58-66, 1:36-57. Baier improves these systems by providing a customized “base presentation” to a user and “superimpo[sing]” “situation-specific information” on the base presentation. *Id.* at 2:13-29, 10:13-23. Baier’s “customized visualizations” specifically “automaticall[ly] locat[e] information that may be of interest/use” to a user by “matching attributes such as the user’s identity, role, location” “with other data such as device/equipment locations, device/equipment status.” *Id.* at 2:56-58, 2:30-44. “[G]iven a set of conditions,” such as equipment/device alarm, type, and state, Baier’s system “can automatically tune a visualization to be optimized.” *Id.* at 10:13-23.

90. As part of generating the customized visualizations, Baier’s system discloses the same steps as the ’817 patent, years before the patent: (1) receiving signals at a central processor from remote equipment/machines and determining a “device context,” such as alarm condition and equipment/machine location, *id.* at 7:36-38, 11:7-13, 11:45-55, 30:32-37; (2) (3) generating and “retriev[ing]” image data from a data store “[d]ynamically” as a “[f]unction of [c]ontext and [s]tate [i]nformation,” including based on the equipment/machine and type of alarm, *id.* at

8:1-11, 6:37-39, 7:38-43; and (3) determining which users should receive information about the alarm, and how to deliver that information, by “matching” a “user’s location, context, and/or role with the location and/or status of device/equipment/system being monitored,” *id.* at 11:7-13, 7:48-55.

91. Baier’s retrieved images can have a variety of features, including selectable, configurable icons “dynamically superimposed on the base presentation component,” as shown in an example below (icons = elements 3020-3022 and 3025). *Id.* at 4:27-29, 5:66-6:6, FIG.30, 20:49-52.



B. CALLAGHAN (EX. 1008)

a. Status of Callaghan

92. U.S. Patent Publication No. 2005/0108364 (“Callaghan”) is entitled “Systems and Methods that Utilize Scalable Vector Graphics to Provide Web-Based

Visualization of a Device.” Callaghan was filed December 10, 2003 and published May 19, 2005, and issued as U.S. Patent No. 8,291,309 (Ex. 1032) on October 16, 2012. As such, I understand Callaghan is prior art at least under 35 U.S.C. § 102(b).

b. Overview of the Disclosure of Callaghan

93. Callaghan describes additional detail regarding types of graphical images that can be used for “remote visualization of an industrial device,” specifically via scalable vector graphics. Ex. 1008 at [0002]. These scalable vector graphics (SVG) are “resolution independent images that can include searchable graphics, text, labels, descriptions, etc., and links to other information.” *Id.* at [0009]. SVG files provide small-sized “vector images” “to render device-related graphics and/or text.” *Id.* at [0010].

C. CHILDERS (EX. 1009)

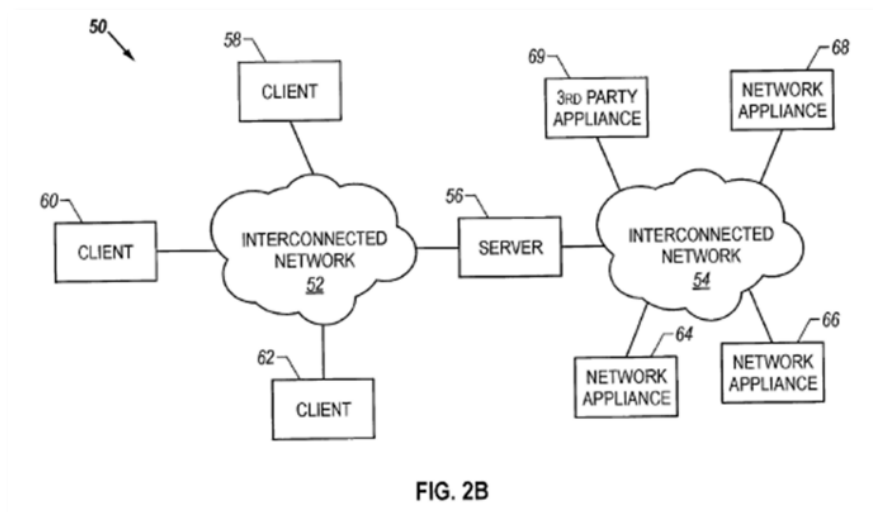
a. Status of Childers

94. U.S. Patent Publication No. 2002/0161885 (“Childers”) is entitled “Methods for Displaying Physical Network Topology and Environmental Status by Location, Organization, or Responsible Party.” Childers was filed March 27, 2002, published October 31, 2002, and later issued as U.S. Patent No. 7,392,309 (Ex. 1026) on June 24, 2008. I understand Childers is prior art at least under 35 U.S.C. § 102(b).

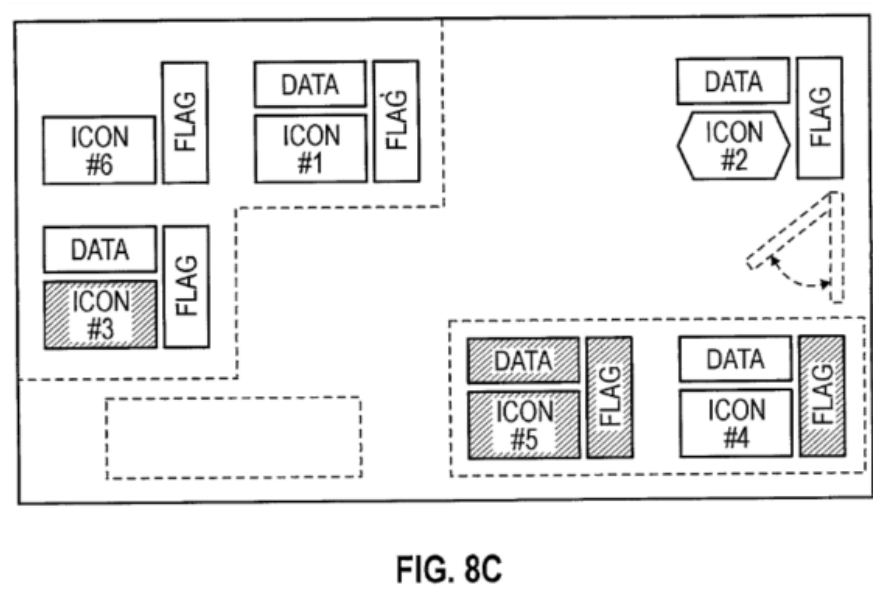
b. Overview of the Disclosure of Childers

95. Childers discloses a “system for remote monitoring of network appliances” (*e.g.*, servers in a server room) for “maintaining security of the equipment.” Ex. 1009 at [0017], [0012]. The aim of Childers’ architecture is to improve the “accessibility, organization, and presentation” of the alarm data for a user. *Id.* at [0013]-[0015]. To that end, Childers discloses generating map displays with icons for the alarm data that can be dispatched to specific clients over a network, thus allowing the clients to monitor distributed facilities without having to incur the expense of an on-premises employee. *E.g., id.* at [0021]-[0023], [0009]-[0010].

96. Childers describes an architecture (shown below) with a central server (1) receiving “alarms” from monitored network appliances 64, 66, 68, 69 relating to various conditions, such as “temperature,” “door sensors,” “motion detectors,” etc., *id.* at [0059], [0077], [0123], FIG.2B; (2) “stor[ing] image data associated with network appliances” and “sensory events occurring on the network appliances,” *id.* at [0022]; and (3) “transferr[ing]” the image data “to the client machine[s],” *e.g.*, 58, 60, and 62, that “display data associated with the network appliances,” using, *e.g.*, “email lists,” “alert lists,” “notification lists,” etc. to identify the destinations. *Id.* at [0021], [0023], [0141]-[0142], FIGs.9A-9B, [0197], [0128].



97. The images sent from the central server to the clients can include maps or other graphical elements, such as “icons” that “represent[] physical location, status, and function” of a network appliance, as shown in exemplary FIG.8C below. *Id.* at [0021], [0130], [0116].



D. BARKER (EX. 1010)

a. Status of Barker

98. U.S. Patent Publication No. 2002/0143934 (“Barker”) is entitled “System and Method for Providing Configurable Security Monitoring Utilizing an Integrated Information System.” Barker was filed April 3, 2001, and published October 3, 2002. I understand Barker is prior art at least under 35 U.S.C. § 102(b).

b. Overview of the Disclosure of Barker

99. Barker discloses a “security monitoring network” that can provide, *e.g.*, “smoke, fire, and/or carbon monoxide” alarms or “access detection” alerts. Ex. 1010 at [0002]-[0004], [0033]. Barker specifically discloses software that can be executed on a central server and that (1) receives a device identifier and condition from the monitoring devices; and (2) processes the device identifier and condition based on “rules” to determine what output should be provided to a user, and which destination and method of communication should be used for providing the output. *E.g., id.* at [0012], [0015], [0031], [0039], [0042], [0044]-[0056], FIGs.5-6. For example, if the software determines that a rule is violated, “instructions” are provided including a “list of the authorized users to notify...and a hierarchy of which communication medium and devices should be utilized to contact each authorized user.” *Id.* at [0054].

**IX. GROUNDS 1, 2, AND 3: ANTICIPATION BY BAIER, OBVIOUSNESS
IN VIEW OF BAIER ALONE AND IN VIEW OF BAIER IN
COMBINATION WITH CALLAGHAN**

100. It is my opinion that claims 1-16 of the '817 patent are anticipated by Baier (Ex. 1007) and would also have been obvious over Baier (Ex. 1007) alone and further in view of Callaghan (Ex. 1008).

A. CLAIM 1

a. 1[pre]: “A method comprising:”

101. To the extent the preamble is limiting, Baier discloses a “method,” for example, a method for generating “a customized visualization” in an “industrial automation environment.” Ex. 1007 at 6:37-42, 11:7-13, 10:46-61.

b. 1[a]: “receiving one or more signals containing a device identifier and a device condition from one or more remote alarm monitoring systems;”

102. Baier discloses “*receiving one or more signals [e.g., at Baier’s visualization system] containing a device identifier and a device condition [e.g., device context information] from one or more remote alarm monitoring systems [e.g., from one or more connected automation devices in the system].*”

103. Baier’s visualization system 100 receives signals from a remote alarm monitoring system—for example, from networked automation devices including “control systems, devices, and/or associated equipment” in an industrial or asset

management environment. *See, e.g., id.* at 6:62-67, 29:24-40 (describing application for “asset management” where “various machines” “can communicate via wireless or wired networks (e.g., Internet)”), 29:26-32 (Baier can apply to “plants with wireless or wired networked equipment...linked via long distance communications lines...”), 2:14-44; *see also* Ex. 1001 at FIG.10, 2:9-35 (“remote alarm monitoring system” includes alarming devices remote from a central server).

104. For example, as shown in FIG.3 (annotated below), Baier’s visualization system 100 includes (1) an “interface component 102” that “receives input” “provided by automation devices,” Ex. 1007 at 7:3-4, 7:25-29; and (2) a “context component 104” that receives the information from the interface component and “can detect, infer or determine” “context data pertaining to automation devices including control systems, devices and associated equipment,” *id.* at 7:30-38.

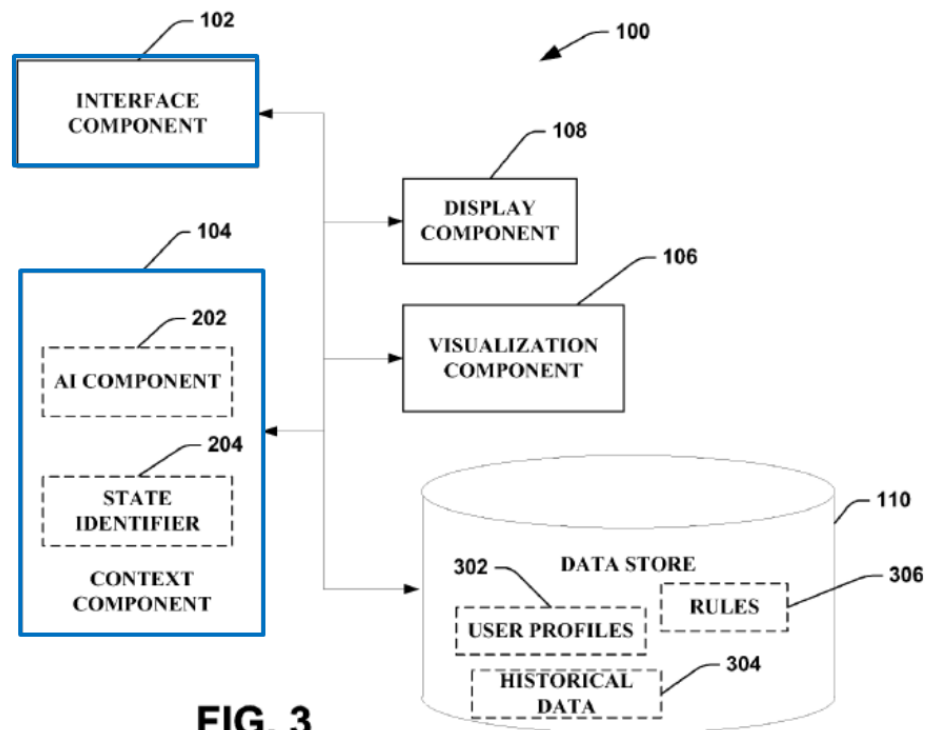
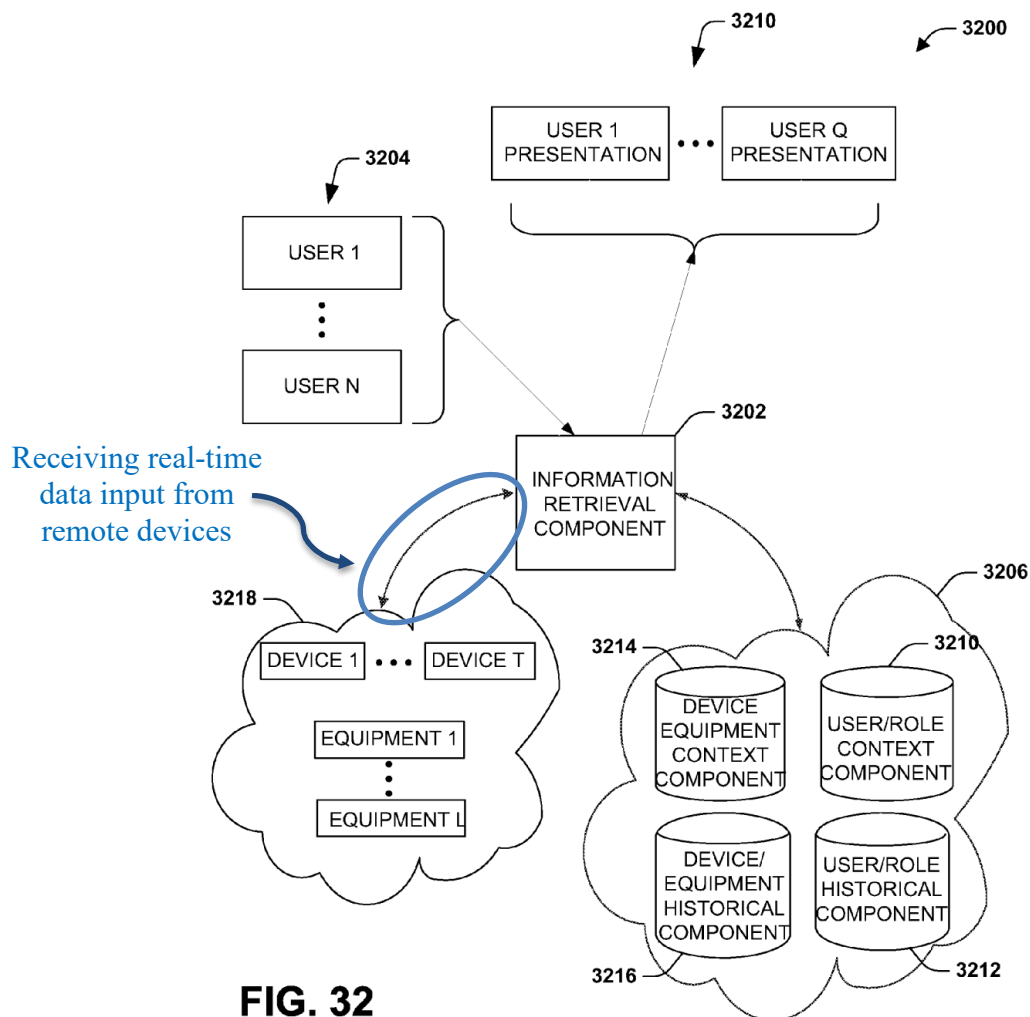


FIG. 3

105. As another example, FIG.32 (annotated below) illustrates an application of Baier's visualization system in an industrial automation environment. Ex. 1007 at 21:4-6. In FIG.32, the "information retrieval component" performs the operations of the interface component 102 and context component 104 of FIG.3 and receives "real-time data" from device(s) (Device 1 to T) and/or equipment (Equipment 1 to L). *Id.*, 21:54-63.

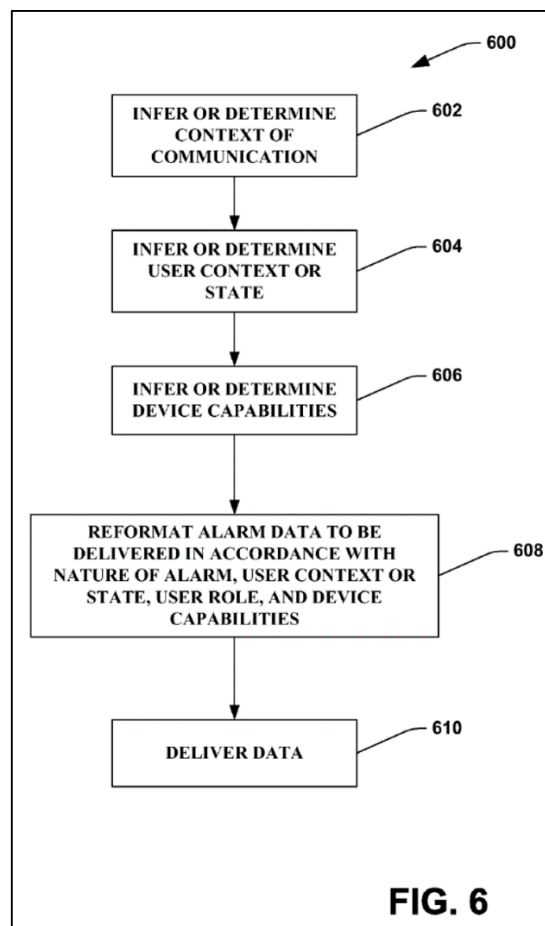


106. The signals received from the remote alarm monitoring system also contain a device identifier and device condition. For example, the input received by interface component 102 and inferred by context component 104 includes “context data pertaining to automation devices.” Ex. 1007 at 7:34-38. The “[d]evice context data” includes “logical/physical locations and operating status (*e.g.*, on/off,

healthy/faulty....)” as well as “warnings, *alarms*,³ and maintenance schedule information.” *Id.* at 7:25-38; *see also id.* at 24:23-40, 30:32-37, 31:37-40. “[L]ogical/physical locations” or “maintenance schedule information,” for example, *identify* a device, and an operating status or alarm provide the device’s *condition*. As another example, Baier describes the signals from the remote devices in FIG.32 (*e.g.*, Device 1 or Equipment L) as including “operating status of the device/equipment (*e.g.*, off, on, run,...), the current stage or process of each device/equipment (*e.g.*, operating, line of code being implemented,...).” Ex. 1007 at 21:54-63. The signals thus include both a device *identifier* (*e.g.*, Device 1 or Equipment L) and a device *condition* (*e.g.*, operating status, current stage or process).

107. FIG.6 also illustrates a method implemented by Baier’s visualization system to receive the device identifier and device condition. At block 602, the system receives a context of a communication, *e.g.*, an “alarm” from a particular device at a particular location being monitored. *Id.* at 11:45-60; *see also id.* at FIG.5, 11:7-13 (assessing “location and/or status of device/equipment/system being monitored”).

³ Emphasis supplied throughout, unless noted.



108. To the extent Patent Owner argues that Baier does not expressly disclose receiving a device identifier, in my opinion, it would have been obvious for a POSITA to implement Baier's signals to include a device identifier. Indeed, a POSITA would have understood that Baier's visualization system necessarily must receive a device identifier so it can assess the "alarms, location, type of machinery, state of system, environmental conditions" based on the received signals to customize the optimal visualization for a user. *Id.* at 10:13-23. Including a device identifier in a signal that already includes an alarm from a particular device would

have been an obvious way to implement Baier's system. Any modifications would have been straightforward to a POSITA, who could have used the same components in the same way as disclosed in Baier, with a reasonable expectation of success.

c. **1[b]: "retrieving enhanced information based on the device identifier and the device condition;"**

109. Baier discloses "*retrieving* [e.g., by Baier's visualization system] *enhanced information* [e.g., base presentation and graphical elements] *based on the device identifier and the device condition* [e.g., device context information]."

110. Baier's visualization system retrieves enhanced information. For example, after device signals are received and analyzed, the context component 104 provides the context data "to the visualization component 106 (*see* FIG.4 below), which can employ such data in connection with deciding on which base presentations" (*i.e.*, "the user's current view of the automation control system") "or items to display" on the base presentation. Ex. 1007 at 7:38-43, 2:23-24, 5:58-66, 2:13-29. The visualization component 106 specifically "can generate, receive, retrieve or otherwise obtain a *graphical representation* of a production environment including one or more objects representing, *inter alia*, devices, information pertaining to devices (e.g., gages, thermometers...) and the presentation itself." *Id.* at 8:1-11, 8:12-39 (retrieved graphical elements can include thumbnails, icons, widgets, among other things). Visualization component 106 can retrieve the

graphical representations from the data store, which “can facilitate quickly conveying relevant visualizations germane to a set of current conditions...” Ex. 1007 at 9:56-64. Thus, in Baier’s visualization system, “automation devices can be presented graphically in an easily comprehensible manner” as “graphics, animations, audio, and video.” *Id.* at 7:59-62.

111. Baier’s visualization system retrieves the enhanced information based on a device identifier and device condition. For example, Baier’s system generates and “retriev[es]” image data from the data store “[d]ynamically” as a “[f]unction of [c]ontext and [s]tate [i]nformation,” including based on the equipment/machine and type of alarm and the “nature of the content to be displayed.” *Id.* at 8:1-11, 6:37-39, 7:38-43, 10:13-45. “[G]iven a set of conditions” such as “alarms, location, type of machinery, state of system, environmental conditions,” the system “can automatically tune a visualization to be optimized.” *Id.* at 10:13-23.

112. Thus, as to a particular device/equipment (*e.g.*, identified in device context information with the device’s location) and a particular condition of the device/equipment (*e.g.*, “alarm” or “state”), the system retrieves enhanced information (“retrieve[s]...a graphical representation” of the device). Ex. 1007 at 8:1-11, 10:13-23, 9:21-30, 9:48-55; *see also id.* at FIGs.7, 59, 12:11-33 (customizing visualization based on machine operating state), 27:1-44, 30:14-26, FIGs.44-53

(workflow visualizations for the device can also be retrieved). Baier's customizable system allows for a variety of displays to be updated "dynamically" "in real-time as changes or events occur." *Id.* at 7:61-67. Accordingly, an operator can automatically be "present[ed]" with information about "operational status of the devices and/or equipment located in the area in which the operator is located." *Id.* at 22:17-31, 22:3-31, FIG.32 ("information retrieval" component sends "present[ation] information relating to" "an alarm on a device and/or piece of equipment" to user presentations 3210).

113. An "exemplary display" rendered by visualization component 106 is shown in FIG.30 (annotated below) and depicts a "base presentation 3010" of specific equipment ("two tanks") as well as icons providing "situation specific information" including "historical information" about the equipment (3020 and 3021) and information indicating whether "attention is required with respect to the associated pump" (3023) and a selectable element (3025) to transition displays. *Id.* at 20:27-60.

FIG.4

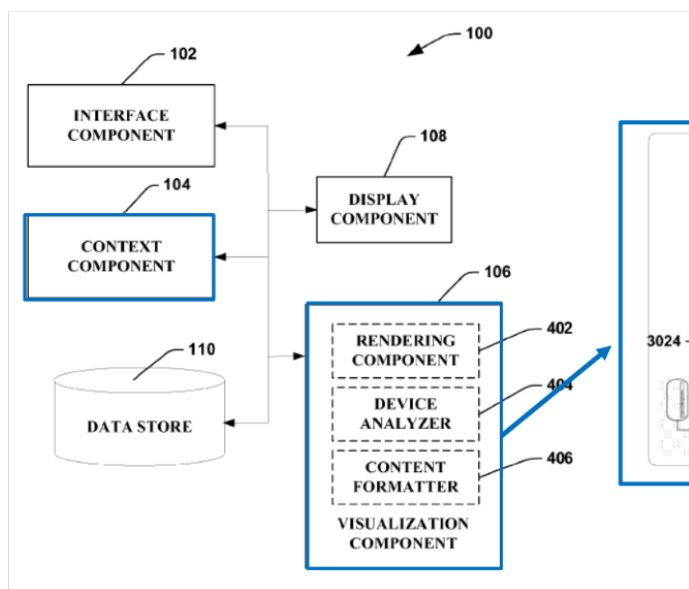
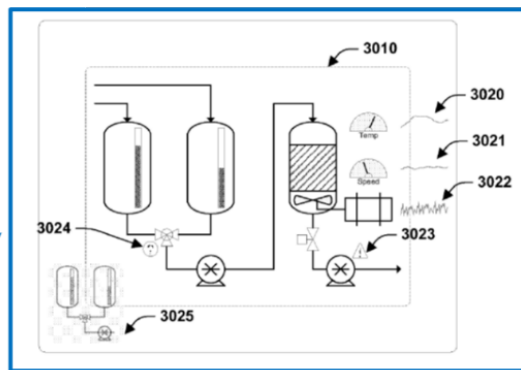


FIG.30



114. To the extent Patent Owner argues that Baier does not expressly disclose retrieving enhanced information based on a device identifier and device condition, in my opinion, this limitation would have been obvious. Baier's system "retrieve[s] or otherwise obtain[s] a graphical representation of a production environment" and customizes an optimal visualization of alarms, machine state, and machine location. Ex. 1007 at 8:1-11, 10:13-23. One obvious way to implement this functionality would have been to check the device identity and alarm condition to determine the specific graphical representations to retrieve from a data store. Baier's system is already specifically designed to implement this functionality, and any modifications to Baier's system that would have been straightforward to a POSITA.

A POSITA could have used the same components in the same way as disclosed in Baier, with a reasonable expectation of success.

d. **1[c-1]: “determining one or more communication methods and communication destinations based on the device identifier and the device condition; and”**

115. Baier discloses “*determining one or more communication methods and communication destinations* [e.g., Baier’s visualization system determines methods of communication and recipients of the communication] *based on the device identifier and the device condition* [e.g., based on device context information].”

116. Baier’s visualization system determines a communication *destination* for the enhanced information, for example, a user with a display device “such as a monitor, television, computer, mobile device, web browser, or the like.” Ex. 1007 at 7:56-61. For each destination, Baier’s system also determines a communication *method*, including a communication format (*e.g.*, resolution) and a communication protocol (*e.g.*, “text message,” “multi-screen computer system with a broadband connection,” “email[],” or “integrat[ion] with calendars or tasks”). *Id.* at 11:63-12:10, 30:23-26, 31:36-52, 8:62-9:39.

117. Baier’s visualization system also determines the *communication destinations based on the device identifier and device condition*. For example, the visualization component 106 receives the device identifier and condition and

“create[s] mappings/linkages” between (1) device/equipment “logical/physical locations” (device identifiers) and “operating status” (device conditions) and (2) the user’s “identity,” “roles and responsibilities,” and “areas or regions of interest/responsibility.” Ex. 1007 at 7:48-55, 24:41-52, FIGs.4, 32, 42. The system “match[es]” each user’s “location, context, and/or role with the location and/or status of device/equipment/system monitored.” *Id.* at 11:7-13. Information about that device can be provided automatically “without prompting or requesting such interest information from the user(s)” based on matching the location and status of device/equipment being monitored to the user. *Id.* at 19:57-66, 20:6-12, 21:4-13.

118. As another example, in FIG.32, the system “make[s] a determination whether a user 3204 would be interested in information relating to a particular/device/equipment.” *Id.* at 21:54-22:16 (“information retrieval component 3202” receives “real-time data from device(s) and/or equipment” and makes linkages between the devices and the users). “[I]f there is an alarm on a device and/or piece of equipment, based on the user context, the user may be presented with information relating to such alarm condition.” *Id.* “This determination can be made based on...*device/equipment context.*” *Id.*

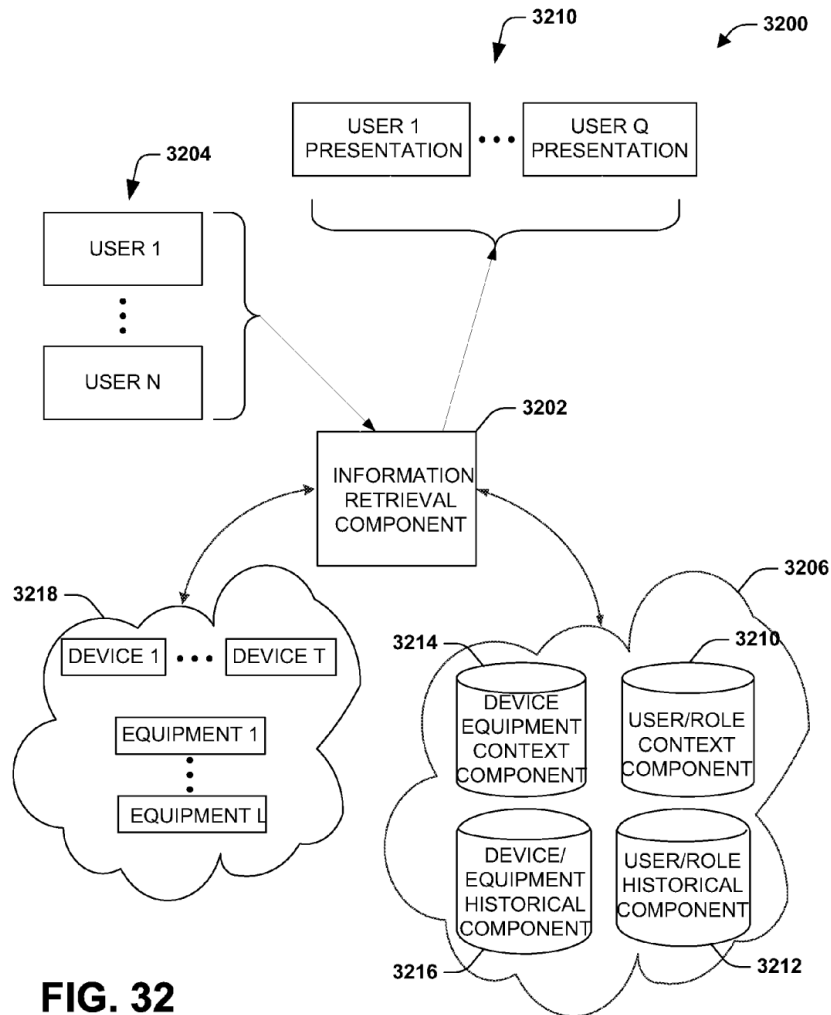


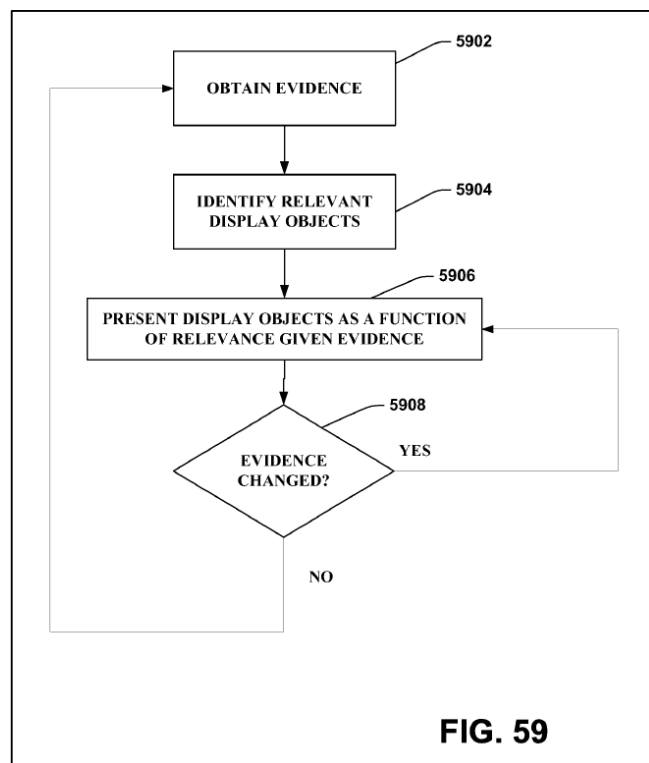
FIG. 32

119. Thus, for example, “if an operator is working in the bottling area of a brewery, system 3200 can automatically present that operator with information about the current operational status of the devices and/or equipment located in the area in which the operator is located”; or “if a maintenance engineer is currently working in the same area, the system 3200 can present that user with information about the maintenance status of the devices and/or equipment located in that area at

substantially the same time;” or “an electrician working in the same area might be presented with information about different devices and equipment, specifically, those related to the electrical systems in that area of the facility, at substantially the same time as the operator and maintenance engineer are presented information.” *Id.* 22:17-31.

120. Baier’s visualization system also determines the *communication methods based on the device identifier and device condition*, in two ways. First, the mapping of a particular device/condition to a user’s identity (communication destination) also determines a communication protocol—*e.g.*, a particular “requirement[] of communication” for that user. Ex. 1007 at 9:19-39, 26:8-44, FIGs.4, 32, 43, 7:48-55, 11:63-12:10, 30:23-26. For example, a user “[s]tate information” and a user’s “[p]rofile” can include “[r]ules” for customizing the visualization session in accordance with preferences and conditions. *Id.* at 9:19-39, 10:5-12. Thus, when a particular user destination is determined based on a device identifier and condition, that user’s profile will determine the protocol for communication (*e.g.*, text), such that the protocol of communication is determined based on the device identifier and condition. *See* Ex. 1007 at 7:56-61 (describing different user devices), 10:5-45 (describing that the system tailors the communication to the user device based on that device’s capabilities).

121. Second, Baier also expressly discloses that, after receiving an alarm from a particular device, that “alarm data is reformatted so that it can be *delivered* in accordance with *nature of the alarm....*” Ex. 1007 at 11:40-12:10, FIG.6. “Thus, alarm data is analyzed and re-formatted so as to facilitate optimizing *delivery* of the *alarm information to a user and particular device being employed.*” *Id.*; *see also id.* at FIGs.5, 20, 10:5-45. Depending on the determined device state, the system may “transition a visualization session from the current set of resources to another set of resources.” *Id.* at 9:19-55, 26:8-44. For example, Baier discloses that the *resolution* and *size* of the communicated images are determined based on the particular device and condition. *E.g., id.* at 30:40-54. FIG.59 (below) illustrates an example: here, the system receives “evidence”—such as “device state” and “device context,” and varies “resolution” as a function of the evidence. *Id.* at 31:36-52, 7:25-38. For example, if a “motor is malfunction[ing]” the “motor” display object may be sent with a different position and resolution. *Id.* at 31:4-52. Changing a position and resolution of an image constitutes changing its method of communication; for example, lower resolution images require less bandwidth and have different communication constraints.



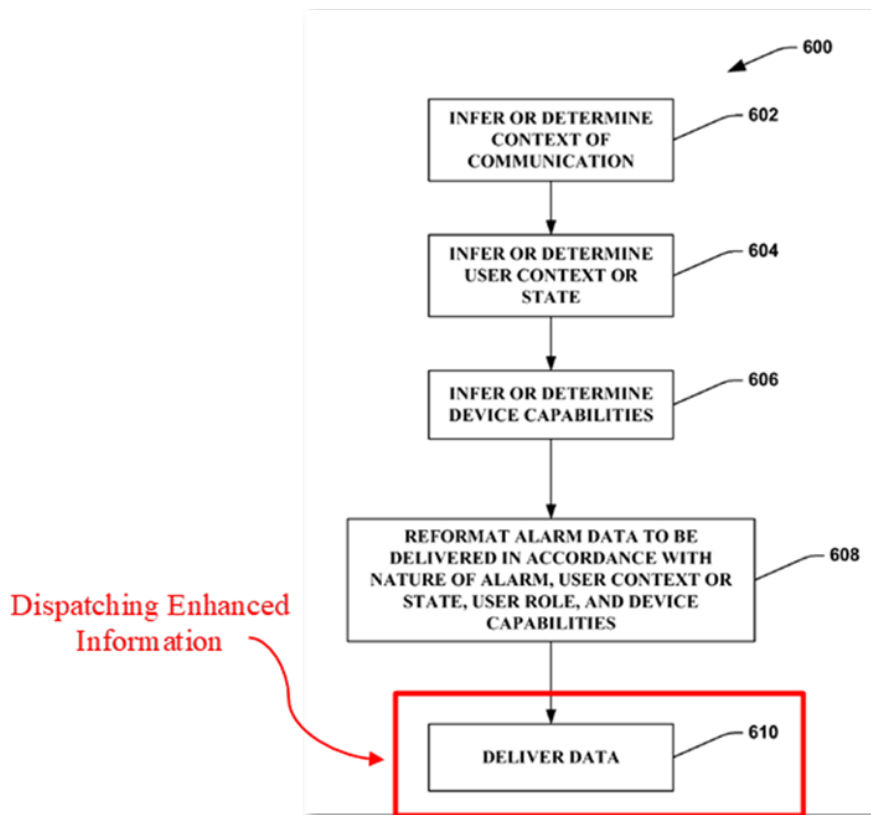
122. To the extent Patent Owner argues that Baier does not expressly disclose determining a communication method based on a device identifier and device condition, in my opinion, this limitation would have been obvious. Baier expressly discloses that its visualization system can communicate with user devices in a variety of protocols (text, email, etc.). Ex. 1007 at 8:62-9:39, 11:63-12:10, 30:23-26. One obvious way to implement this functionality is to determine the specific protocol based on the alarming device identity and condition. For example, if a device at a particular location has an emergency alarm that must immediately be flagged for a maintenance engineer, the system determines that the engineer should be notified via text for optimal, timely delivery. Ex. 1007 at 11:63-12:10 (formatting

alarm data as a text). Any modifications necessary to implement this functionality would have been straightforward for a POSITA, as Baier already discloses user profiles that could store preferred communication protocols for particular devices and conditions as well as AI or rules that can infer when to “transition[] communications sessions” based on the context of a device condition. Ex. 1007 at 8:62-9:55. A POSITA could have used the same components in the same way as disclosed in Baier, with a reasonable expectation of success.

e. **1[c-2]: “dispatching the enhanced information to the one or more communication destinations using the one or more communication methods; and”**

123. Baier discloses “*dispatching the enhanced information* [e.g., delivering the base presentation and graphical elements] *to the one or more communication destinations using the one or more communication methods* [e.g., destinations and methods determined by the visualization system].”

124. As shown in block 610 of FIG.6 (annotated below), Baier’s visualization system “deliver[s]” the retrieved and reformatted enhanced information (base presentation and graphical elements) to the user’s rendering device. Ex. 1007 at FIG.6; *id.* at 10:5-45, 7:38-43, 24:35-40, 4:35-37, 7:56-67.



125. Baier's visualization system delivers the information using the determined communication device and method "without prompting or requesting such interest information from the user(s)" based on matching the location and status of device/equipment/system being monitored to the user. *Id.* at 19:57-65, 20:6-12, 21:4-13. Further, "alarm data is analyzed and re-formatted so as to facilitate optimizing *delivery* of the *alarm information to a user and particular device being employed.*" *Id.* at 11:61-63, FIGs.5-6, 20, 10:5-45. "Thus, the user is automatically provided a rich set of information related to their current task/situation." *Id.* at 2:40-44.

126. To the extent Patent Owner argues that Baier does not expressly disclose dispatching the enhanced information using the determined communication method, this limitation would have been obvious for the same reasons I described for limitation 1[c-1].

- f. **1[d-1]: “wherein the retrieving enhanced information based on the device identifier and the device condition comprises retrieving images based on the device identifier and the device condition, the images comprising all of the members selected from the group consisting of”**

127. Baier discloses “*retrieving enhanced information based on the device identifier and the device condition comprises retrieving images based on the device identifier and the device condition.*” For the same reasons I described for limitation 1[b], Baier discloses limitation 1[d-1] because the enhanced information includes “images” such as a “base presentation” and other graphical elements. §IX.A.c. Moreover, the images in Baier comprise all the members of the claimed group, as I address below.

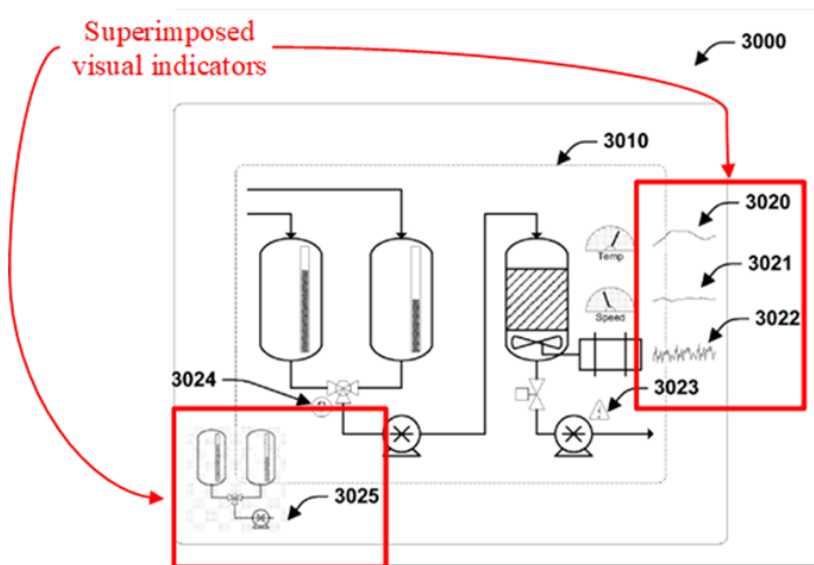
- g. **1[d-2]: “superimposed visual indicators,”**

128. Baier discloses that the retrieved enhanced information includes “*superimposed visual indicators.*”

129. For example, Baier discloses that “[v]arious display items can be dynamically superimposed on the base presentation component to provide industrial

control information to a user.” Ex. 1007 at 4:27-30; *see also id.* at 13:59-61. This is done “[b]y exploiting situation-specific data or ‘information of interest’, e.g., based on factors such as the user’s identity, role, location (logical or physical), current task, current view, and so forth” to create interfaces that “superimpose such situation-specific information upon the user’s current view of the automation control system (‘base presentation’).” *Id.* at 2:19-28; *see also id.* at 8:12-36, 20:47-56; 20:32-39, 20:60-21:3, 24:64-25:24.

130. For example, in FIG.30 (annotated below), “[i]tems 3020, 3021, 3022, and 3025 are superimposed on the display” in a way so as not to “obscure information provided by the base presentation 3010,” and “items 3023 and 3024 are superimposed entirely over base presentation 3010, but are small enough not to cover any objects provided thereby.” *Id.* at 20:49-56; FIGs. 30, 31, 33 34; *id.* at 20:32-39, 20:60-21:3.



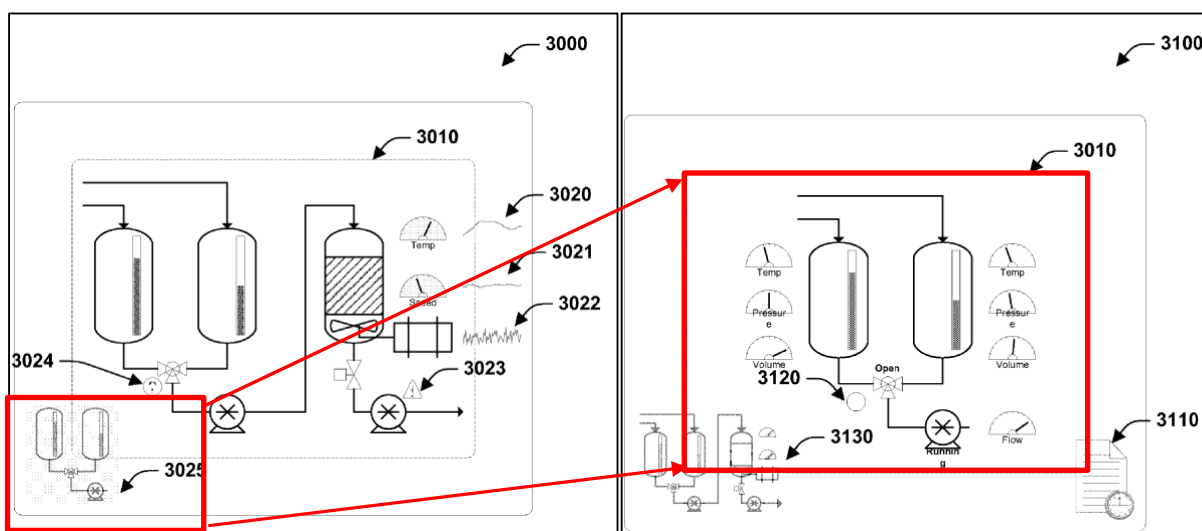
h. **1[d-3]: “hierarchically organized graphical images, and”**

131. Baier discloses that the retrieved enhanced information includes, among other things, “*hierarchically organized graphical images.*”⁴ See §VII.A (describing claim constructions in the ADT Matter).

132. In Baier, graphical images are accessible through each other for “quick[] access[] [to] additional information” by “drilling down into a subset of data.” Ex. 1007 at 22:65-23:1, 22:46-52. For example, Baier discloses that “[a] user can interact with any of the display objects which may cause the display to change,” e.g., clicking “item 3025” in FIG.30 results in “display 3100 of FIG.31,” which

⁴ The ’817 patent describes that “[a] hierarchically organized graphical image may include any group of graphical images arranged relative to one another and/or accessible through one another.” Ex. 1001 at 5:39-41.

shows “the selected information and automatically superimposes new, situation-specific information.” *Id.* at 20:57-21:3, FIGs.30-31 (annotated below). Baier also generally discloses that “as a user selects, or hovers over a particular view” a display object corresponding to that view is “displayed in greater detail.” Ex. 1007 at 22:35-37, 8:40-52, 25:25-37.



i. **1[d-4]: “vector-based graphical images.”**

133. As I discussed above, the court adopted ACI’s proposed construction for “vector-based graphical images” to mean “images that include one or more vectors.” Ex. 1006 at 9-10; *see* §VII.A. The court rejected ADT’s proposed construction: “vector image files.” Ex. 1006 at 9-10. Under the construction ACI advocated and the court adopted in the ADT Matter, Baier discloses “vector-based graphical images.” In addition, under a construction of “vector-based graphical

images” to mean “vector image files,” Baier in view of Callaghan renders “vector-based graphical images” obvious.

i. Baier alone

134. Baier discloses images that include one or more vectors, when zooming in on/out of and panning across an image.

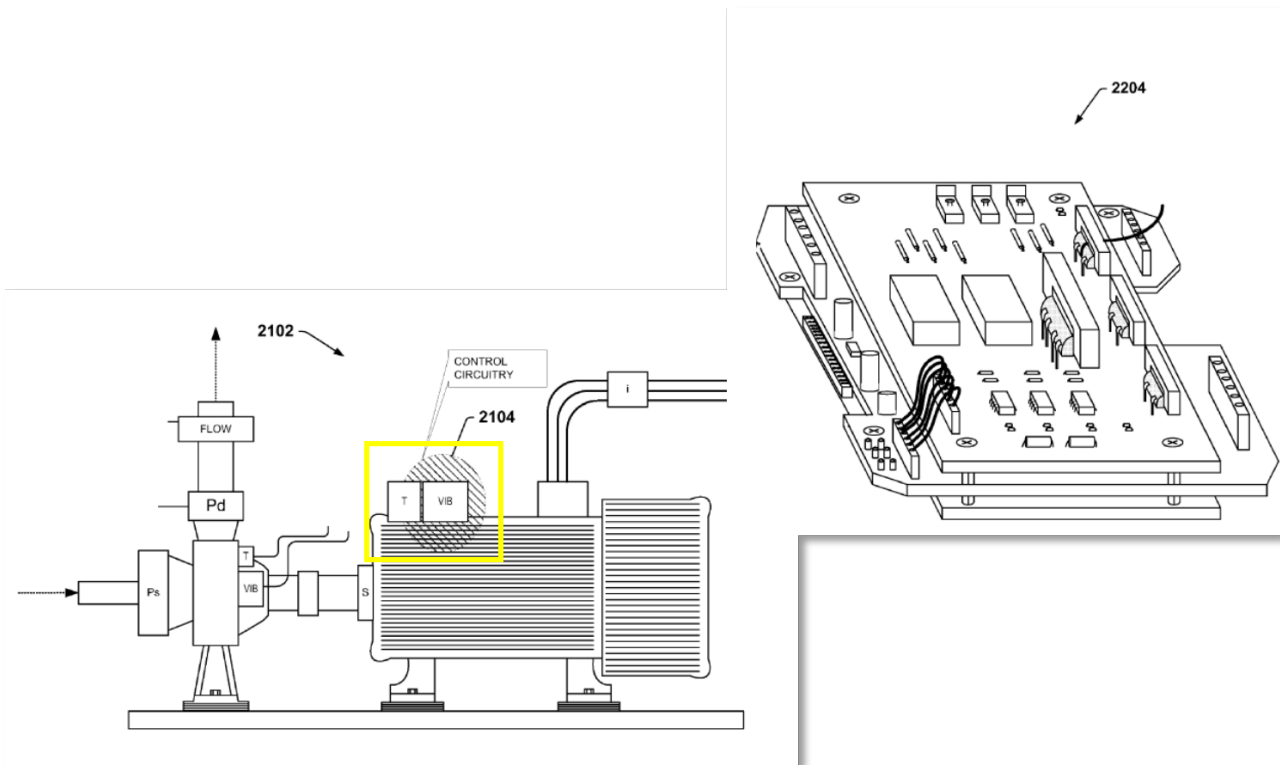
135. For example, in Baier, “as a user zooms in on an area of an image that is pixel-mapped to a higher-resolution version thereof, data corresponding to the area under focus is streamed to the display area coincident with respect [to] pixels mapped thereto and resolution of the image area can be augmented, preserved, or enhanced.” Ex. 1007 at 15:45-16:5, FIG.16. “Accordingly, as a user zooms in on a particular region of the image, instead of the image becoming grainy, or blurry, the image maintains or increases resolution as a result of image data being streamed to the user to supplement the region of interest with more image data.” *Id.* at 16:5-10.

136. To implement this feature, Baier discloses a reference component 1602 that “determines or infers focus of attention of the user, or level and rate of zoom into or out of a display area” and generates “reference information,” and a resolution component 1604 that determines additional image data needed to “increase resolution of the area of interest.” Ex. 1007 at 16:11-21. “[D]ata is streamed to the

user as a function of zoom or pan level,” for example “to augment, preserve, or increase resolution of an area of interest.” *Id.* at 16:61-67, 17:13-21.

137. While Baier does not use the term “vector,” the process of generating “reference information” determines a vector—*i.e.*, a quantity with a magnitude and direction. Baier’s system determines the level (magnitude) of “zooming *in or out*” or “panning *across*” (direction) input by a user and then streams images using this vector to preserve image resolution. Ex. 1007 at 15:45-47, 16:61-67, 17:13-21. Notably, the functionality of magnifying an image while preserving image resolution is how the ’817 patent describes “vector-based graphical images.” Ex. 1001 at 5:58-59 (“vector-based graphical images” “allow[] magnification without degradation”).

138. This is illustrated, for example, in FIGs.21-22 of Baier (annotated below). FIG.21 illustrates an area of a factory including a motor. *Id.* at 17:22-40. The user is “*directed*” to an area 2104 of the factory including the motor’s control circuitry. *Id.* at 17:30-32. The user can then “zoom[] in on area 2104,” and then “image data corresponding to the control circuitry within the housing is streamed to the user.” *Id.*, 17:22-40. FIG.22 illustrates the high-resolution image of the control circuitry that results. *Id.*, 17:41-42. This example therefore shows *images* (the original image and the higher resolution associated with the control circuitry) that include one or more vectors (the level and direction of zoom and pan).



ii. Baier in view of Callaghan

139. It is my opinion that Baier in view of Callaghan also renders this limitation obvious under any construction, including if “vector-based graphical images” means vector image files.

140. Callaghan discloses using *vector-based graphical images* including vector image files, such as a “scalable vector graphics” (SVG) file. Ex. 1008 at [0009]. SVG files are relatively small-sized and allow magnification without degradation and are often used for displaying geometric, non-photographic information. For example, Callaghan describes using SVG files in an industrial environment to “represent a portion of a device” such that a “user can interact with

the graphical representation” of the device to “monitor a device’s performance.” Ex. 1008 at [0009]-[0010]. When a user wishes to view a particular device, the user can download the SVG file for display. Ex. 1008 at [0013]. Callaghan’s system “can be exploited within an industrial setting, wherein a device’s faceplate can be represented within an SVG file.” Ex. 1008 at [0029]. Because SVG files are only retrieved when necessary and are small-sized and can be magnified, Callaghan reduces storage and bandwidth consumption while allowing a user to zoom in on particular images. Ex. 1008 at [0030].

141. A POSITA would have been motivated to implement Baier’s visualization system using the SVG files described in Callaghan. Baier and Callaghan are both assigned to Rockwell Automation Systems, and POSITAs would naturally have looked to references assigned to the same entity when considering modifications. Ex. 1007 at p.1; Ex. 1008 at p. 1; Ex. 1032 at p.1 (showing assignment). Baier and Callaghan are also in the same general field, *e.g.*, industrial control systems, and are both geared towards enabling a user to “interact with industrial control systems” via a remote graphical interface. *E.g.*, Ex. 1007 at 1:36-41, 24:64-25:2; Ex. 1008 at [0009], [0013].

142. Baier and Callaghan also both expressly acknowledge that increasing resolution of graphical images—for example, when a user “zooms in”—requires a

balance of “system resources,” including “processing resources” and “bandwidth” and must “facilitate system speed or responsiveness.” Ex. 1007 at 15:47-53; Ex. 1008 at [0030]. Baier achieves these goals by streaming additional pixel data over a network to the display area “as a user zooms in” and thus “providing high-resolution images while judiciously utilizing system resources.” Ex. 1007 at 15:45-16:10, FIGs.16, 19. Callaghan’s SVG files also meet the same aims and “reduc[e] overhead and bandwidth requirements” and “render[] graphics that are resolution independent and searchable.” Ex 1008 at [0010], [0009], [0024], FIG.6.

143. Thus, both Baier and Callaghan solve the problems of bandwidth and memory usage without compromising functionality, and a POSITA would have been motivated to integrate Callaghan’s SVG file into Baier’s system when particular user devices/graphics are well suited for SVG files. Callaghan’s SVG files further reduce bandwidth consumption and would have been an obvious design choice in any bandwidth-limited environment. Such a bespoke solution is accounted for in Baier’s system, which generates customized and tailored visualizations based on a variety of factors, including user device capabilities. Ex. 1007 at 10:29-32, 10:46-61.

144. Moreover, POSITA would have understood that using the SVG file of Callaghan in Baier’s system would have been a simple substitution with predictable results and a reasonable expectation of success. The images in Baier are suitable for

representation with SVG files. For example, FIGs.21-22 of Baier show high level depictions of equipment drawn in line segments, rather than photographs, and are thus well-suited for SVG files.

145. Moreover, although Baier describes using additional pixel data to address the resolution problem, it is not limited to only that solution. Baier describes using “*substantially any type of application*” for displaying images to a user. Ex. 1007 at 5:57-66 (“It is noted that the interfaces described herein can include a Graphical User Interface (GUI) to interact with the various components for providing industrial control information to users. This can include substantially any type of application that sends, retrieves, processes, and/or manipulates factory input data, receives, displays, formats, and/or communicates output data, and/or facilitates operation of the enterprise. For example, such interfaces can also be associated with an engine, editor tool or web browser although other type applications can be utilized.”).

146. An SVG file could have easily been used in Baier’s architecture. For example, Baier’s system could start with “[s]parse images,” as disclosed (Ex. 1007 at 15:58-59), but if reference component 1602 determines that a user should focus on a particular device because it has malfunctioned or entered a particular state, instead of determining additional pixels to stream to the user, the resolution

component 1604 could identify an SVG file for the device. Ex. 1008 at [0029] (each device has an SVG file). The SVG file could then be “streamed” to the user to “augment, preserve, or increase resolution of an area of interest” (Ex 1007 at 16:65-67)—as Callaghan describes. Ex. 1008 at [0029].

147. For these reasons, it is my opinion that the combination of Baier and Callahan would have been predictable and obvious to a POSITA.

B. CLAIMS 2-3 – DEVICE IDENTIFIER AND CONDITION

- a. **2: “The method of claim 1, wherein the receiving one or more signals containing a device identifier and a device condition from one or more remote alarm monitoring systems comprises: receiving one or more signals containing a device identifier for a smoke detector, a pull station, a security detector, a carbon monoxide detector, and a check-in monitor from one or more remote alarm monitoring systems.”**

148. Baier discloses claim 2. I understand Petitioner proposes to construe this term to require that each of the five types of signals are received. In the ADT Matter, the court only required that one of the signals is received. Regardless of the construction that is applied, it is my opinion that Baier invalidates claim 2.

149. Under the construction in the ADT Matter, it is my opinion that Baier anticipates the claim. For the reasons I described for limitation 1[a], Baier discloses a visualization system receiving signals from an automated device containing a device identifier and device condition. Baier discloses, or at least renders obvious,

that the device identifier is for a *security detector* (e.g., detecting “alerts, emergencies, security, authentication”) or a *check-in monitor*⁵ (e.g., “inventory” systems, using RFID and other metrics to monitor access to a machine). Ex 1007 at 10:46-61, 24:23-26, 12:11-24.

150. In my opinion, Baier also renders obvious the other recited device types, a *smoke detector*, *pull station*, and *carbon monoxide detector*.⁶ For example, Baier discloses monitoring temperature and dangerous “health[]” of industrial equipment, that can pose risks of smoke, fire, and carbon monoxide emissions. *E.g.*, Ex. 1007 at 7:36-38 (health status), FIGs.30-31 (depicting temperature gauge), 21-22, 45-53, 17:22-24. All the recited detection devices were also well known in the art. Moreover, Baier’s system is intentionally customizable (e.g., Ex. 1007 at 29:22-40) and implementing Baier with the recited devices would have involved simply applying a known device in its ordinary manner with predictable results and a reasonable expectation of success.

⁵ In the specification, the ’817 patent describes a “check-in monitor” as a monitor for “elderly individuals or children” that determines “failure to check-in.” *See* Ex. 1001 at 3:44-46.

⁶ In the specification, the ’817 patent depicts a “pull station” as a fire alarm. *See* Ex. 1001 at FIG.10, 3:15.

- b. **3: “The method of claim 1, wherein the receiving one or more signals containing a device identifier and a device condition from one or more remote alarm monitoring systems comprises: receiving one or more signals containing a device condition of normal, fault, and supervisory from one or more remote alarm monitoring systems.”**

151. For the reasons I described for limitation 1[a], Baier discloses a visualization system receiving signals from an automated device containing a device identifier and device condition. Baier also discloses *normal* (e.g., “healthy”), *fault* (e.g., “faulty”), and *supervisory* (e.g., “on/off”) signals, including “[d]evice context data [which] can include but is not limited to logical/physical locations and operating status (e.g., on/off, healthy/faulty ...).” Ex. 1007 at 7:36-38.

C. **CLAIMS 4-10 – RETRIEVING ENHANCED INFORMATION**

- a. **4: “The method of claim 1, wherein the retrieving enhanced information based on the device identifier and the device condition comprises: retrieving enhanced information including one or more sounds based on the device identifier and the device condition.”**

152. Baier discloses claim 4. As I have described for limitation 1[b], Baier retrieves enhanced information based on a device identifier and device condition. Moreover, Baier discloses that the retrieved enhanced information can include sound. For example, Baier describes that “[t]he data can be presented as one or more of alphanumeric characters, graphics, animations, audio and video.” Ex. 1007 at 7:59-63. Baier also describes incorporating sounds into a visualization using “sounds

to facilitate operations with the interfaces.” *Id.* at 5:66–6:4. For example, these sounds “may be used to indicate proximal relationships between object thumbnails, such as when an object thumbnail being ‘moved’ is close to a preexisting cluster of object thumbnails.” *Id.* at 30:64-67.

- b. **5: “The method of claim 4, wherein the retrieving enhanced information including one or more sounds based on the device identifier and the device condition comprises: retrieving enhanced information including one or more sounds organized on one or more graphical images based on the device identifier and the device condition.”**

153. Baier discloses claim 5. As discussed for claim 4, Baier discloses retrieving enhanced information with *sounds* based on a device identifier and device condition. Baier discloses including *sounds organized on one or more graphical images*: “a display having one or more display objects (not shown) including such aspects as configurable icons, buttons, sliders, input boxes, selection options, menus, tabs and so forth having multiple configurable dimensions, shapes, colors, text, data and *sounds* to facilitate operations with the interfaces.” Ex. 1007 at 5:66–6:4. These sounds “may be used to indicate proximal relationships between object thumbnails, such as when an object thumbnail being ‘moved’ is close to a preexisting cluster of object thumbnails.” *Id.* at 30:64-67; *see also id.* 7:59-63.

- c. **6: “The method of claim 1, wherein the retrieving enhanced information based on the device identifier and the device condition comprises: retrieving enhanced information including one or more communication links based on the device identifier and the device condition.”**

154. Baier and Callaghan disclose claim 6. As described for limitation 1[b], Baier discloses retrieving enhanced information based on a device identifier and device condition. In addition, Baier discloses retrieving *communication links* based on the device identifier and the device condition.

155. For example, Baier describes that “other information” besides graphical imagery, such as “documents, data logs, design sheets, trouble-shooting guides, URLs, etc.” “can be made available to the use[r] to enhance the visualization experience as well as achieve goals....” Ex. 1007 at 17:47-52. A URL is a “communication link” as the term is used in the ’817 patent. Ex. 1001 at 7:10-12 (“communication link” may include “a phone number, an email account, an instant message account, an IP address, or the like”). In addition, Baier also discloses that “visualization can be emailed to users as well as integrated with calendars or tasks....” *Id.* at 30:23-26, FIGs.51-52.

156. In addition, Callaghan discloses that the vector graphics files “can include searchable graphics, text, labels, descriptions, etc., and links to other information.” Ex.1008 at [0009], [0048], [0052], [0040] (“URLs and/or hyperlinks

can be utilized to locate and/or specify locations of information...[which] can be launched from drop-down menus, shortcuts and/or buttons.”). For the reasons I described for limitation 1[d-4], it would have been obvious to combine Callaghan’s vector graphics files with Baier.

- d. **7: “The method of claim 6, wherein the retrieving enhanced information including one or more communication links based on the device identifier and the device condition comprises: retrieving enhanced information including one or more communication links organized on one or more graphical images based on the device identifier and the device condition.”**

157. Baier and Callaghan disclose claim 7 for the same reasons I described for claim 6. For example, Baier describes that “other information” besides graphical imagery, such as “documents, data logs, design sheets, trouble-shooting guides, URLs, etc.” “can be made available to the use[r] to enhance the visualization experience as well as achieve goals...” Ex. 1007 at 17:47-52. In addition, Callaghan discloses that the vector graphics files “can include searchable graphics, text, labels, descriptions, etc., and links to other information;” Ex. 1008 at [0009], [0048], [0052], [0040]. For the reasons I described for limitation 1[d-4], it would have been obvious to combine Callaghan’s vector graphics files with Baier.

- e. **8: “The method of claim 1, wherein the retrieving enhanced information based on the device identifier and the device condition comprises: retrieving enhanced information including written information based on the device identifier and the device condition.”**

158. Baier and Callaghan each disclose claim 8. As described for limitation 1[b], Baier discloses retrieving enhanced information based on a device identifier and device condition. In addition, Baier and Callaghan disclose that enhanced information can include *written information*.

159. Baier discloses that the enhanced information can include “alphanumeric characters.” Ex. 1007 at 7:61-62. Callaghan also discloses vector graphics “that can include...*text*.” Ex. 1008 at [0009]. As I described for limitation 1[d-4], it would have been obvious to combine Callaghan’s vector graphics files with Baier.

- f. **9: “The method of claim 8, wherein the retrieving enhanced information including written information based on the device identifier and the device condition comprises: retrieving enhanced information including date/time information, account information, premises information, device information, condition information, support information, contact information, linked information, and instructional information based on the device identifier and the device condition.”**

160. I understand Petitioner proposes to construe this term to require that each of the written information are retrieved. In the ADT Matter, the court only

required that one of the types of written information is retrieved. Regardless of the construction that is applied, it is my opinion that Baier discloses claim 9.

161. As described for limitation 8, Baier discloses retrieving enhanced information based on a device identifier and device condition, where that enhanced information can include *written information*.

162. As shown in exemplary visualizations below, Baier's written information can include *premises* and *device information* (e.g., written descriptions of components of a specific "conveyor line, 4500," Ex. 1007 at 29:41-45, FIG.46); *date/time information*, *condition information*, and *support information*⁷ (e.g., "usage profile graph 4800" associated with use of the conveyor line over time, *id.* at 29:46-48, FIG.48); *account*, *contact information*, *instructional*,⁸ and *linked*⁹ information (e.g., workflow information such as "revenue" 5004 and "[o]rder" information 5006, *id.* at 29:50-61, FIG.50). *See also* Ex. 1007 at 30:23-26, FIG.52 (integrating

⁷ Support information is described in the '817 patent as "a real-time or previously captured record of action taken and/or reported by others, report data, archival data, or the like." Ex. 1001 at 8:62-65.

⁸ Instructional information is described in the '817 patent as "a message, note, or the like." Ex. 1001 at 9:2-3.

⁹ Linked information is described in the '817 patent as "a URL, file attachment, or the like." Ex. 1001 at 9:1-2.

“calendars or tasks” and “email[]” as additional date/time and contact information),
17:47-52 (e.g., “documents” and “URLs” can also be linked).

FIG.46

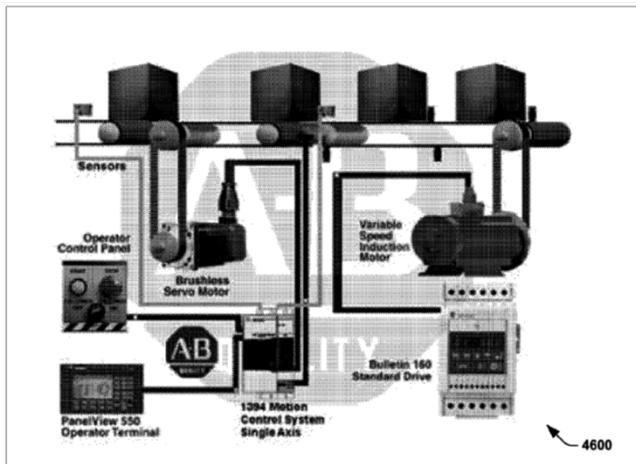


FIG.50

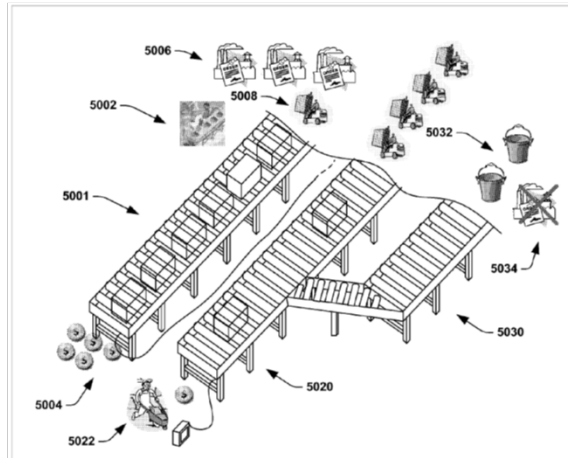
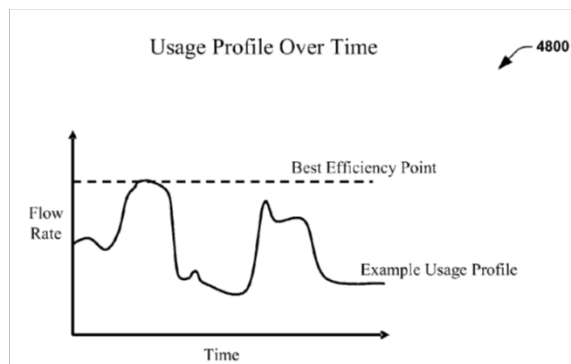


FIG.48



163. To the extent Patent Owner argues any of the recited written information is not disclosed, each would have been obvious in view of Baier, as it would have required merely implementing known written information according to ordinary usage as needed for specific applications. To the extent any modification would have been necessary, it would have been straightforward for a POSITA to

implement in Baier's architecture and inherently customizable displays, with a reasonable expectation of success.

- g. **10: "The method of claim 8, wherein the retrieving enhanced information including written information based on the device identifier and the device condition comprises: retrieving enhanced information including written information organized on one or more graphical images based on the device identifier and the device condition."**

164. Baier and Callaghan disclose claim 10 for the reasons I explained for claim 8.

D. CLAIMS 11-13 – DETERMINING COMMUNICATIONS METHOD AND DESTINATION

- a. **11: "The method of claim 1, wherein the determining one or more communication methods and communication destinations based on the device identifier and the device condition comprises: determining one or more communication methods of email, text message, instant message, website link, phone, and mail based on the device identifier and the device condition."**

165. I understand Petitioner proposes to construe this term to require that each of the six types of communication methods are determined. In the ADT Matter, the court only required that one of the communication methods be determined. Regardless of the construction that is applied, it is my opinion that Baier discloses claim 11.

166. As described for limitation 1[c-1], Baier discloses determining a communication method based on the device identifier and device condition. In addition, Baier discloses determining an *email* (or *mail*) communication method: “[i]t is to be appreciated that such visualization information can be emailed to users as well as integrated with calendars or tasks 5210 as shown in FIG. 52.” Ex. 1007 at 30:23-26; *see also id.* at Figure 52.

167. Baier also discloses a *text message* and *phone* communication method: “if the user is at a remote location with a lot of ambient noise, and only a cellphone is available, the alarm would be delivered as a text message rather than relying on audible broadcast.” Ex. 1007 at 11:61-66.

168. Baier also discloses an *instant message* or *website link* communication method: “in an office in front of a multi-screen computer system with a broadband connection, the alarm information may be provided as text, audio, images, video, chat sessions, etc. since there are more resources to utilize to convey the information as well as provide for the user to react to the alarm information.” *Id.* at 12:5-10; *see also id.* 17:47-52 (“other information” such as “URLs” can be made available to the use[r] to enhance the visualization experience”).

169. To the extent Patent Owner argues any of the recited communication methods is not disclosed, each would have been obvious, as it would have required

merely implementing known communication protocols according to their ordinary usage as needed for specific applications. To the extent any modification would have been necessary, it would have been straightforward for a POSITA to implement in Baier's architecture, with a reasonable expectation of success.

- b. **12: “The method of claim 1, wherein the determining one or more communication methods and communication destinations based on the device identifier and the device condition comprises: determining one or more device communication destinations of a personal computer, a phone, a mobile device, a display, and a custom device based on the device identifier and the device condition.”**

170. I understand Petitioner proposes to construe this term to require that each of the five types of communication destinations are determined. In the ADT Matter, the court only required that one of the communication destinations be determined. Regardless of the construction that is applied, it is my opinion that Baier discloses claim 12.

171. As described for limitation 1[c-1], Baier discloses determining a communication destination based on the device identifier and device condition. In addition, Baier discloses destinations of a *cell phone*, *mobile device*, *display*, and *personal computer*, any of which can be a *custom device*. Ex. 1007 at 11:61-12:10. Additionally, “such visualization information can be emailed to users as well as

integrated with calendars or tasks 5210 as shown in FIG. 52.” *Id.* at 30:23-26; *see also id.* at Figure 52.

172. To the extent Patent Owner argues any of the recited communication destinations is not disclosed, each would have been obvious, as it would have required merely implementing known communication destinations according to their ordinary usage as needed for specific applications. To the extent any modification would have been necessary, it would have been straightforward for a POSITA to implement in Baier’s architecture, with a reasonable expectation of success.

- c. **13: “The method of claim 1, wherein the determining one or more communication methods and communication destinations based on the device identifier and the device condition comprises: determining one or more entity communication destinations of an authority, a first responder, a service company, an owner, a manager, a staff, an occupant, a supplier, a customer, a neighbor, and a custom entity based on the device identifier and the device condition.”**

173. I understand Petitioner proposes to construe this term to require that each of the recited types of communication destinations are determined. In the ADT Matter, the court only required that one of the communication destinations be determined. Regardless of the construction that is applied, Baier discloses claim 13.

174. As described for limitation 1[c-1], Baier discloses determining a communication destination based on the device identifier and device condition. In addition, Baier discloses the recited destinations, as those terms are used in the '817 patent, including *security* (e.g., “security”) and *managers, staff, customers, suppliers, service company, owner* (e.g., managers or owners with “business objective[s]” receive information for “reduc[ing] costs,” staff for “maintenance labor,” “customer demand,” suppliers and service companies for “power consumption”). Ex. 1007 at 10:54, 27:25-44, 22:17-31). Baier also discloses information for *first responders* and *authorities* (e.g., to address “emergencies” and “security” and “authentication,” *id.* at 10:46-61) as well as users receiving information based on location, such as an *occupant* or *neighbor* as those terms are used in the '817 patent (e.g., person at a specific location “in a production facility,” *id.* at 11:7-13). *See* Ex. 1001 at 12:25-36.

175. Moreover, to the extent Patent Owner argues any of the recited destinations are not disclosed, each would have been obvious, as it would have required merely implementing known communication destinations according to their ordinary usage as needed for specific applications. Baier broadly discloses that the information can be tailored to *different persons/roles*. E.g., Ex. 1007 at 7:44-55. To the extent any modification would have been necessary, it would have been

straightforward for a POSITA to implement in Baier's architecture, with a reasonable expectation of success.

E. CLAIM 14 – DISPATCHING

- a. 14: “The method of claim 1, wherein the dispatching the enhanced information to the one or more communication destinations using the one or more communication methods comprises: dispatching the enhanced information automatically without requiring operator intervention to the one or more communication destinations using the one or more communication methods.”

176. Baier discloses claim 14. For example, in Baier, “information of interest to one or more user can be identified without prompting or requesting such interest information from the user(s).” Ex. 1007 at 19:57-59. “[T]he user is automatically provided a rich set of information related to their current task/situation without generally requiring that person/situation/information mappings be predefined by control system designers.” Ex. 1007 at 2:40-44; *id.* at 10:5-12, 11:61-12:10, 30:23-26.

F. CLAIMS 15-16 – RECEIVING ENHANCED INFORMATION

- a. 15: “The method of claim 1, further comprising: receiving enhanced information, one or more communication methods, and one or more communication destinations via a user interface that is remotely accessible.”

177. Baier discloses claim 15. For example, Baier discloses that the visualization system can “receive input from a user” that “correspond[s] to object

identification, selection and/or interaction therewith.” Ex. 1007 at 7:3-43. For example, user input can “affect the display” and thus provide enhanced information. *Id.* at 7:18-20. As described for limitation 1[c-2], the user interface also receives enhanced information from Baier’s visualization system. A visualization system can also receive “preferences” from a user, which could include a desired communication destination and method. *Id.* at 8:62-9:3. The user can provide input remotely from a remote “mobile device” or “personal computer” with a “user interface.” *Id.* at 7:56-67, 33:44-60.

178. To the extent Patent Owner argues Baier does not disclose receiving a communication destination or method via a user interface, Baier renders this claim obvious. Given Baier’s disclosure of received user preferences, it would have been a straightforward design choice to allow a user to indicate a preference of communication destination and method via a user interface. Any modifications to Baier’s systems would have been straightforward to a POSITA with a reasonable expectation of success, as Baier’s system already discloses a variety of communication destinations and methods as well as customization based on user preferences.

- b. **16: “The method of claim 1, further comprising: receiving one or more communication methods and one or more communication destinations from data of a personal device.”**

179. Baier discloses claim 16 for the same reasons explained for claim 15.

Ex. 1007, 33:44-60.

X. GROUND 4: OBVIOUSNESS OF CLAIMS 1-16 IN VIEW OF CHILDERS COMBINED WITH BARKER

180. It is my opinion that Claims 1-16 of the '817 patent would have been obvious over Childers (Ex. 1009) combined with Barker (Ex. 1010) (referred to herein as “Childers/Barker”).

A. REASONS TO COMBINE CHILDERS AND BARKER

181. Childers discloses a “system for remote monitoring of network appliances.” Ex. 1009 at [0017]. When an event occurs at a “network appliance,” Childers’ programmable central server receives a signal identifying the specific appliance and its condition. *Id.* at [0059]-[0061]. The central server also stores image and map configuration data, such as maps and icons, “associated with network appliances.” *Id.* at [0021]-[0022], [0060]. The central server then “transfer[s]” the data to the “client machine” for display. Ex. 1009 at [0021]-[0022], [0060], [0074], [0079], [0132]. Childers describes various types of client machines that may receive the data, including user PCs and handheld devices, and using various communication

methods, such as “ethernet, wireless ethernet, TCP/IP, HTTP, FTP, SNMP, Blue Tooth” as well as “email.” *Id.* at [0102], [0081], FIG.4, [0090]-[0098], [0056], [0141], [0072],. Childers also discloses “email lists,” “alert lists,” “notification lists,” “responsibility lists,” and “communication protocols” to communicate the events. *Id.* at [0141]-[0142], FIGs.9A-9B, [0197].

182. On its own, Childers thus generally discloses a programmable central server that receives a device identifier and condition as input and retrieves and sends enhanced information to a destination using a communication method as output. Childers, however, does not disclose details regarding how the central server processes the disclosed inputs to obtain the disclosed outputs. A POSITA would have been motivated to fill in these details by implementing Childers’ central server using Barker’s software for processing device identifiers and conditions.

183. Like Childers, Barker discloses a central server for receiving device identifiers and conditions from monitored devices. Ex. 1010 at [0012], [0015], [0031], [0039], [0042], [0045]. In addition, FIGs.5-6 of Barker disclose specific software “routine[s]” to execute on the central server for processing the device identifiers and conditions to obtain outputs (“Barker’s Rule-Based Software”). *Id.* at [0050]-[0052].

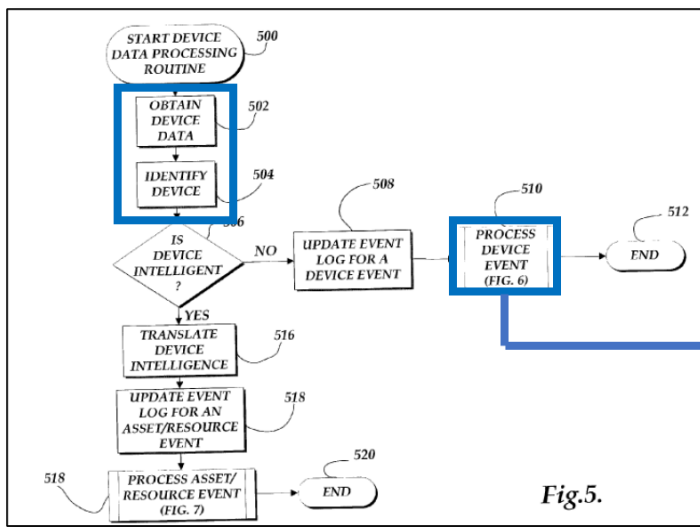


Fig.5.

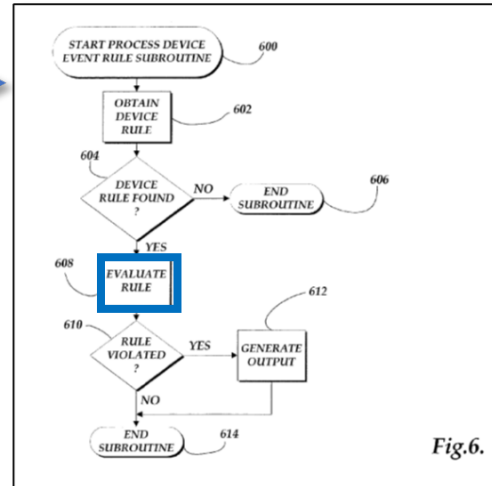


Fig.6.

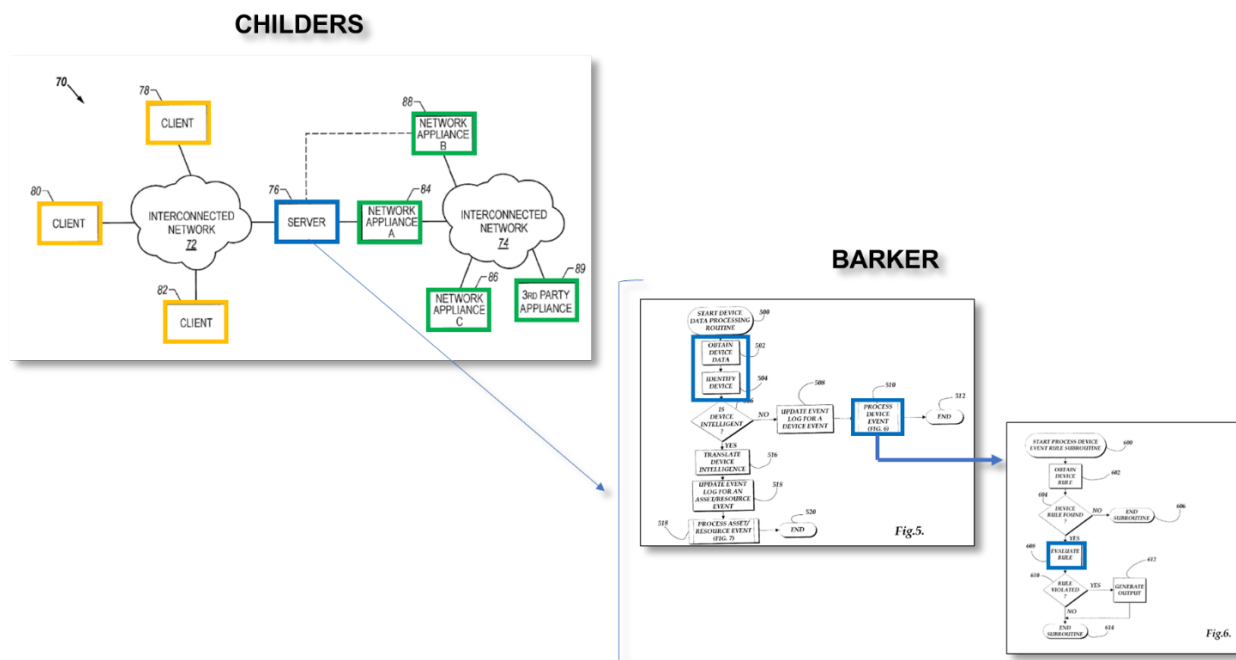
184. In FIG.5, “the central server 56 obtains an input from a monitoring device,” shown as “device data” (block 502), including a device identifier, e.g., “a network address from which the input originated and which is assigned to the specific devices” or “other identification data that can be included with the data input,” and “event data” (such as an “on/off state”). Ex. 1010 at [0050], [0047], [0014]. After certain checks, in block 510, “the central server 56 processes the data” according to device rules. *Id.* at [0051], [0015], [0052]; *see also id.* at FIG.6 (processing “event data”). “Based on an evaluation of the rules, the central server generates outputs in the form of communication to one or more authorized users via a variety of communication mediums and devices....” *Id.* at [0013], [0049].

Specifically, if a rule is violated, “instructions” are provided including a “list of the authorized users to notify in the event of a rule violation and a hierarchy of which communication medium and devices should be utilized to contact each authorized user.” Ex. 1010 at [0054].

185. A POSITA would have understood that implementing Barker’s Rule-Based Software in Childers’ central server would have been a simple, predictable combination reasonably expected to succeed. Both Childers and Barker disclose receiving and processing a device identifier and a device condition and generating output to dispatch to clients. Barker simply provides implementation details for the same architecture already disclosed in Childers, and no design changes thereto would have been required. Indeed, Barker’s Rule-Based Software for processing the inputs to generate the output involves execution of simple software subroutines on a generic server with a processing unit storing computer-executable instructions, just as the central server is described in Childers. Ex. 1010 at [0041]-[0042], [0047]; Ex. 1009 at [0105]-[0113].

186. Accordingly, as illustrated below, a POSITA could easily have plugged Barker’s Rule-Based Software into Childers’ central server using the “Java code” or “C++ code” already disclosed in Childers for programming the server, and any modifications would have been straightforward to and easily implemented by a

POSITA. Ex. 1009 at [0110]. Regarding Childers' inputs, the same device identifier and condition could be received in the same way and be used as inputs to Barker's Rule-Based Software; regarding Childers' outputs, the same enhanced information could be stored at the central server and selected as an output as a result of Barker's Rule-Based Software process. A POSITA would simply have used Barker's Rule-Based Software to determine which specific enhanced information to send and which specific destination to send it to via which specific method.



187. A POSITA would have had numerous reasons to make this combination. First, Barker and Childers are in the same field of art, *e.g.*, remote monitoring networks. Ex. 1010 at [0002]; Ex. 1009 at [0004], [0211]. Both

references also describe systems which help to create and distribute information containing alarm sensor data. Ex. 1010 at [0012]; Ex. 1009 at [0004], [0211].

188. Second, Childers and Barker are directed to similar problems; each address the problems and expense of relying on human security personnel to monitor devices on premises. Ex. 1009 at [0007]-[0013]; Ex. 1010 at [0007]. Each also describes similar problems in accessing, organizing, and presenting information for a user. Ex. 1009 at [0015]-[0016]; Ex. 1010 at [0012].

189. Third, Childers and Barker solve these problems in similar ways. Both references disclose (1) receiving device identifiers and conditions over a network, and (2) automatically determining an output to indicate a device event and a particular communication destination and method by which to dispatch the output. Barker provides additional details of an algorithm for implementing this process that would have predictably worked in Childers' architecture providing the same benefits thereto as disclosed in Barker.

190. Therefore, it is my opinion that a POSITA would be both motivated, and able, to combine Childers and Barker with an expectation of success.

B. CLAIM 1

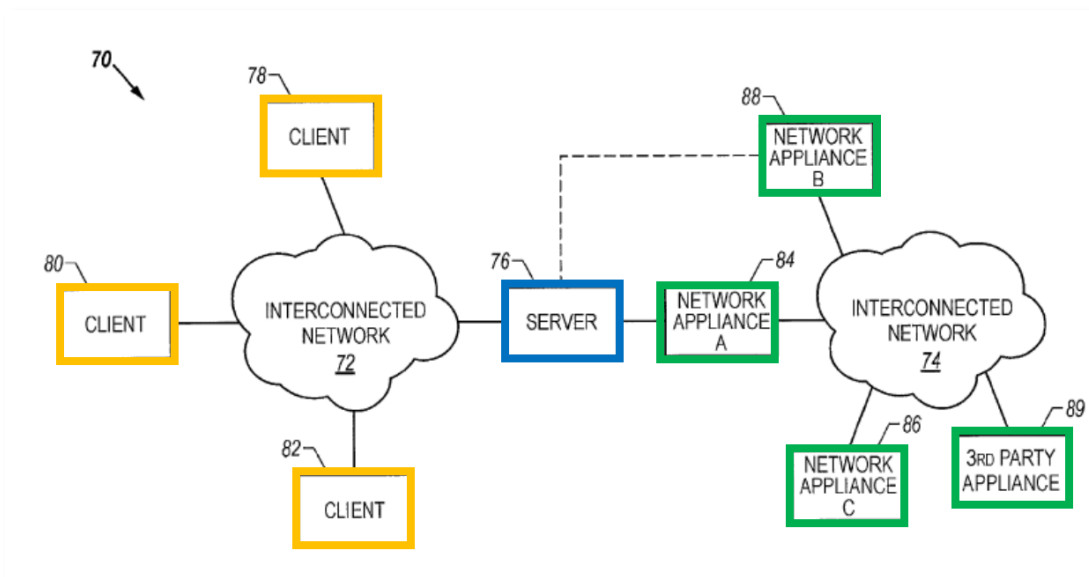
a. 1[pre]: “A method comprising:”

191. To the extent the preamble is limiting, Childers/Barker discloses a method. *E.g.*, Ex. 1009 at [0004] (method of monitoring network enabled sensor equipment).

b. 1[a]: “receiving one or more signals containing a device identifier and a device condition from one or more remote alarm monitoring systems;”

192. Childers/Barker discloses “*receiving one or more signals [e.g., at Childers’ central server implementing Barker’s Rule-Based Software] containing a device identifier and a device condition [e.g., Childers’ network appliance identifier and alarm] from one or more remote alarm monitoring systems [e.g., from one or more connected network appliances in Childers’ system].”*

193. As shown in FIG.2C (annotated below), Childers discloses a central server (blue) that *receives signals* from remote network appliances (green) in a *remote alarm monitoring system*. Ex. 1009 at [0211], [0060]. The network appliances “periodically deliver their sensor data,...‘pushing’ the data to the server.” *Id.* at [0061]. The network appliances, which are *remote* from the server, send information using digital signals over a network. *Id.* at [0059].



194. The communication from the network appliance includes a signal that contains a *device identifier* for the network appliance. For example, Childers discloses that the “network appliances 16 may...communicate with the server 14 through hypertext transfer protocols” (HTTP) using a “TCP/IP protocol communications method” or could even send “an email message.” Ex. 1009 at [0059], [0123]. For HTTP, Childers also discloses that the system “support[s] ‘discovering’ appliances by handling Appliance-initiated HTTP Posts. When an Appliance issues a Post to the Server, the server will determine if the Appliance is one already managed by the Server. If not, the Appliance will be automatically added.” Ex. 1009 at [0066].

195. Whether the network appliance issues an HTTP Post request to the server or sends an email to the server—either method includes an identifier for the

appliance so that the server can respond to the request. Ex. 1009 at [0123], [0159]-[0173] (disclosing use of HTTP 1.1 requests from a network appliance to a server); *see also id.* at [0174]-[0197] (HTTP POST packet flow). Specifically, HTTP communications that use TCP/IP provide unique addresses for each appliance. Ex. 1024 at 11 (HTTP is carried over TCP/IP¹⁰); Ex. 1021 §2.7 (TCP/IP provides unique addresses within each TCP by concatenating address identifying the TCP with a port identifier to create a socket which will be unique throughout all networks connected together), §3.1 (TCP layer header contains source port in signal); Ex. 1019 §3.1 (IP layer header contains source address in signal).¹¹ Moreover, to the extent a network

¹⁰ A POSITA would have understood that although HTTP can be carried over other protocols, TCP/IP is by far the most common. Further, Childers describes using TCP/IP. Ex. 1009 at [0059], [0144]. Childers also expressly discloses that network appliance device discovery can be conducted based on IP address. *See id.* at [0063] (“the server may attempt to find network appliances through discovery. For example, the server may attempt to communicate with each possible address in a given IP address range.”).

¹¹ Exhibits 1019, 1021 and 1024 are Requests for Comment (RFCs) promulgated by the Internet Engineering Task Force (IETF), which govern the standards used for IP, TCP and HTTP. These RFCs are available for free on the IETF website. POSITAs often refer to RFCs and would have been aware of these RFCs prior to 2009. I understand that Exhibits 1019, 1021, and 1024 were retrieved from the Internet Archive as they existed in 2005-2006. I was personally familiar with these documents at the time, and the exhibits are accurate copies of the documents as they existed at that time.

appliance has multiple sensors, Childers also discloses that the signal also identifies individual sensors. *See* Ex. 1009 at [0203], FIG.14 (tracking sensors). Thus, in either case, the server can then alert a client machine that a particular device needs attention. Ex. 1009 at [0125], [0200]-[0201].

196. The network appliance data received by the server in Childers also contains a *device condition*, e.g., “information relating to alarms and alerts.” Ex. 1009 at [0060]-[0061]. For example, “[w]ith the communication, the network appliance may...indicate status,” such as “temperature, humidity, door sensors, alarms, power quality, motion detectors and cameras, among others.” *Id.* at [0059], [0123], [0125], [0138]; *see also id.* at [0197] (“Network appliance data ... may be organized by ... alarm state, and status among others.”).

197. As explained above in §X.A, any modification to implement the feature of receiving a device identifier and condition in the combination would have been straightforward to a POSITA because, for example, Barker’s software already is designed to receive the same type of device identifiers and conditions. Ex. 1010 at [0047], [0050] (input includes event data and device identifier including “network address”).

c. **1[b]: “retrieving enhanced information based on the device identifier and the device condition;”**

198. Childers/Barker discloses “*retrieving* [e.g., by Childers’ central server implementing Barker’s Rule-Based Software] *enhanced information* [e.g., Childers’ maps and icons] *based on the device identifier and the device condition* [e.g., a network appliance identifier and an alarm in Childers’ system].”

199. Childers’ central server *retrieves enhanced information*, including “image data” and “configuration data” such as a “map” or “plot” with superimposed “icons” representing physical locations and status of network appliances. Ex. 1009 at [0021]-[0022], [0060], [0074], [0084], FIG.5. Image and configuration data can be “stored on the server,” including in various databases. *Id.* at [0060], [0074], [0105]. The stored data is “associate[d]” with network appliances such that, if there is an event associated with the network appliance, the data is retrieved from memory and “transferred” to the client machine for display. *Id.* at [0021]-[0022], [0060], [0074]-[0075], [0079], [0132] (“The map or image may change in response to events associated with the network appliances.”). For example, icons may be arranged “according to type, location, alarm state, configuration, parameter value, or organization” and may “represent[] physical location, status, and function” of a network appliance. *Id.* at [0100], [0021]; *id.* at [0100] (displayed data may be in table or graphical form), [0128]-[0130] (describing display of map data).

200. Childers/Barker discloses that this enhanced information is retrieved based on the device identifier and the device condition. Barker's Rule-Based Software specifically generates "one or more outputs" based on a device identifier and device condition. Ex. 1010 at [0015], [0047], [0049], [0050], [0052], [0054]. As I described in §X.A, it would have been obvious to a POSITA to implement Barker's Rule-Based Software in the central server of Childers to determine which specific enhanced information to retrieve and output when a specific device identifier and device condition is received as input. Under this combination, when Childers' central server receives an alarm condition and device identifier, *e.g.*, via an HTTP communication, it uses Barker's Rule-Based Software, which is already set up to process the network appliance's "network address" and device state, to determine an output based on the alarm condition and device identifier, specifically the particular enhanced information to dispatch. Ex. 1010 at [0047], [0050].

d. **1[c-1]: "determining one or more communication methods and communication destinations based on the device identifier and the device condition; and"**

201. Childers/Barker discloses "*determining one or more communication methods and communication destinations [e.g., Childers' central server implementing Barker's Rule-Based Software to determine a client device destination and method of communication] based on the device identifier and the device*

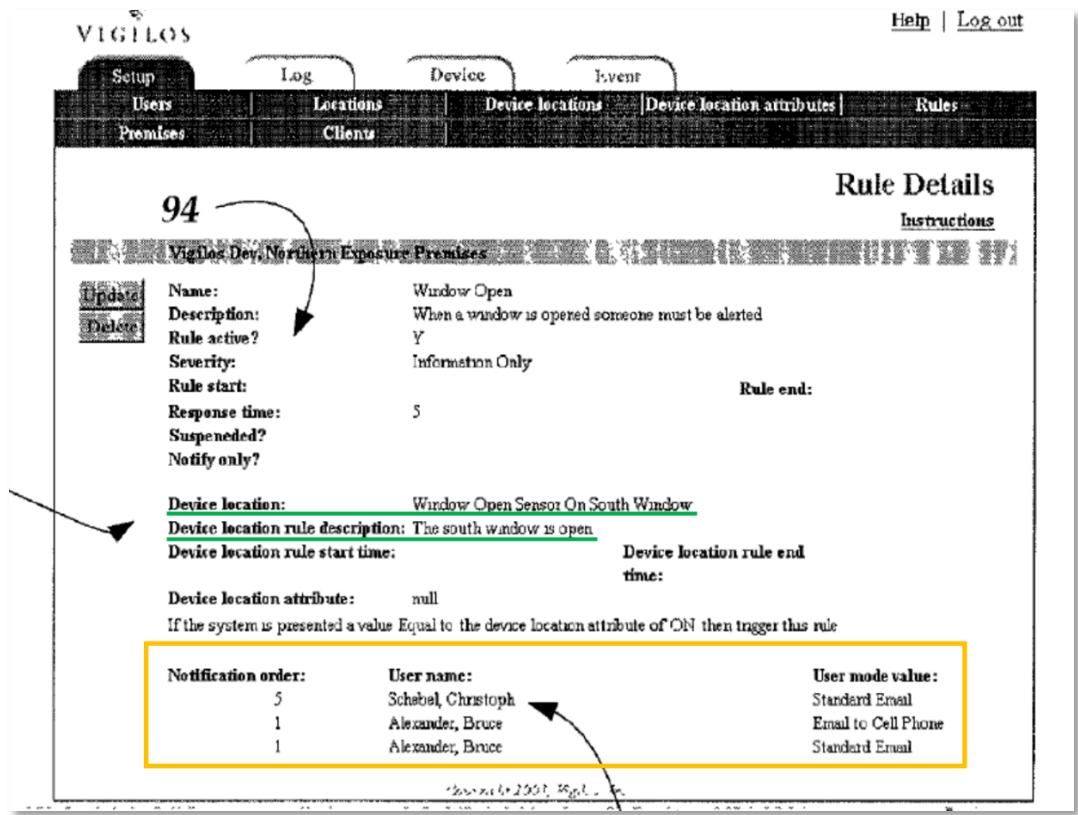
condition [e.g., based on a network appliance identifier and an alarm in Childers' system].”

202. Childers discloses that its central server can communicate with client *destinations* of various types, including PCs and handheld devices, using different types of *communication methods*, such as “ethernet, wireless ethernet, TCP/IP, HTTP, FTP, SNMP, Blue Tooth” as well as “email.” Ex. 1009 at [0102]-[0105], [0081], FIG.4, [0090]-[0098], [0056], [0141], [0072]. Childers also describes that central server stores “email lists,” “alert lists,” “notification lists,” “responsibility lists,” and “communication protocols” that correspond to specific network appliances. *Id.* at [0141]-[0142], FIGs.9A-9B. Network appliances can also be “organized” into groups based on “a list of users that have access to the group for security” or “by location, responsible party, organization, network appliance type, version, alarm state, and status among others.” *Id.* at [0197], [0128].

203. Childers/Barker discloses that these communication destinations and methods can be determined based on the received device identifier and device condition. Specifically, under this combination, when Childers' central server receives an alarm condition and device identifier, *e.g.*, via an HTTP communication, it uses Barker's Rule-Based Software, which is already set up to process the network appliance's “network address” and device state, to “evaluat[e]” a rule based on the

identified device and condition to determine a communication destination and method. Ex. 1010 at [0013]-[0014], [0047]-[0053], FIGs.5-6. For example, “[e]ach authorized user has a preference of notification means...,” such as “electronic messaging” and “short message services,” and “the rules may be in the form of logical if/then statements implementing an iterative hierarchy for establishing communication with an authorized user.” *Id.* [0045], [0054], [0066]. If a rule is violated, “instructions” are provided including a “list of the authorized users to notify...and a hierarchy of which communication medium and devices should be utilized to contact each authorized user.” *Id.* at [0054], [0045]-[0046].

204. For example, FIG.8 of Barker (annotated below) illustrates a rule (green) for a window sensor device. If the server receives a signal that the window is open, then, based on that information, the server will notify a particular user via email (orange). Ex. 1010 at [0067].



205. Thus, the communication method and destination in Barker are based on the alarming device’s identifier and condition, as encoded in Barker’s rules associated with that device. As described in §X.A, it would have been obvious to a POSITA to implement Barker’s Rule-Based Software in the central server of Childers to determine the specific communication destination and method for a received device identifier and device condition.

e. **1[c-2]: “dispatching the enhanced information to the one or more communication destinations using the one or more communication methods; and”**

206. Childers/Barker disclose “*dispatching the enhanced information* [e.g., delivering Childers’ maps and icons] *to the one or more communication destinations using the one or more communication methods* [e.g., destinations and methods determined by Childers’ central server implementing Barker’s Rule-Based Software].”

207. As described in §X.A and for limitations 1[b] and 1[c-1], it would have been obvious to implement Barker’s Rule-Based Software in Childers’ central server to retrieve enhanced information and generate an output with that enhanced information and a communication destination and communication method for the output. Childers also discloses that its central server dispatches that output, for example, the central server pushes the image data to the client machine—*e.g.*, “[t]he client may wait and acquire data updates as they occur.” Ex. 1009 at [0087], [0021], [0075], [0078]-[0079] (server “suppl[ies]” the information to client machines); Ex. 1010 at [0054], [0066].

- f. **1[d-1]: “wherein the retrieving enhanced information based on the device identifier and the device condition comprises retrieving images based on the device identifier and the device condition, the images comprising all of the members selected from the group consisting of”**

208. Childers/Barker discloses “retrieving enhanced information based on the device identifier and the device condition comprises retrieving images based on the device identifier and the device condition.” For the same reasons I stated for limitations 1[b], Childers/Barker discloses limitation 1[d-1] because the enhanced information includes images such as a map and icons. §X.B.c. Moreover, Childers describes all the members of the claimed group, as I address below. As described in §X.A, the Childers/Barker combination would not have required modifying any of Childers’ enhanced information output.

- g. **1[d-2]: “superimposed visual indicators,”**

209. Under Childers/Barker, the retrieved enhanced information includes Childers’ “*superimposed visual indicators.*”

210. Childers discloses storing and dispatching a map with icons “superimposed” on the map. Ex. 1009 at [0100]. “[T]he icons may be arranged according to type, location, alarm state, configuration...” *Id.* at [0100], [0021], [0128], [0132]. In FIG.8C (annotated below), “the background may depict a map of

a physical location over which icons are displayed representing the physical location of an associated network appliance.” Ex. 1009 at [0024], [0132], FIGs.8A-8B, 8D.

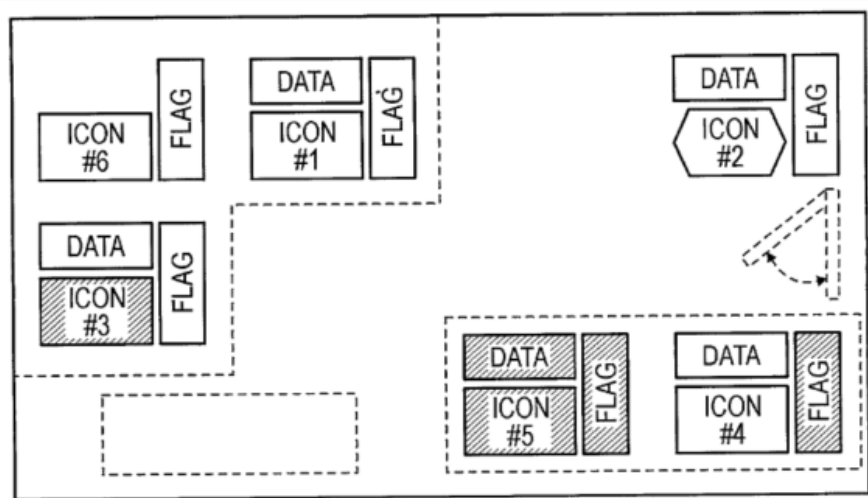


FIG. 8C

h. 1[d-3]: “hierarchically organized graphical images, and”

211. Childers/Barker also discloses that the retrieved enhanced information includes “*hierarchically organized graphical images*.”¹² See §VII.A (describing claim constructions in the ADT Matter).

212. For example, Childers discloses that the “icons may link to present or historical values of the network appliances associated with the icons,” and “*an action*

¹² The ’817 patent describes that “[a] hierarchically organized graphical image may include any group of graphical images arranged relative to one another and/or accessible through one another.” Ex. 1001 at 5:39-41.

such as clicking an icon may initiate another display such as another map, table, or graph.” Ex. 1009 at [0116], [0131] (“clicking on the icon may display another mapping, a data table, and an icon configuration”). Further, “[t]he icons may be arranged” relative to each other, for example, “in a manner indicative of physical location, type, capabilities, status, alarm state...” Ex. 1009 at [0116], [0121].

i. **1[d-4]: “vector-based graphical images.”**

213. As I discussed above, the court adopted ACI’s proposed construction for “vector-based graphical images” to mean “images that include one or more vectors.” Ex. 1006 at 9-10; *see* §VII.A. The court rejected ADT’s proposed construction: “vector image files.” Ex. 1006 at 9-10. Under either construction, Childers/Barker discloses *vector-based graphical images*.

214. For example, Childers discloses displaying a “map” on a client device that includes icons superimposed on a background image, where the icons represent network appliances. Ex. 1009 at [0116]. Childers expressly discloses that this background image may be a “vector plot.” *Id.* at [0116]. As I described in §V.C.c, a vector plot refers to a representation of an image using vectors, such as vector graphics stored in various known file formats, including, for example, an SVG file.

C. CLAIMS 2-3 – DEVICE IDENTIFIER AND CONDITION

- a. 2: “The method of claim 1, wherein the receiving one or more signals containing a device identifier and a device condition from one or more remote alarm monitoring systems comprises: receiving one or more signals containing a device identifier for a smoke detector, a pull station, a security detector, a carbon monoxide detector, and a check-in monitor from one or more remote alarm monitoring systems.”

215. I understand Petitioner proposes to construe this term to require that each of the five types of signals are received. In the ADT Matter, the court only required that one of the signals is received. Regardless of the construction that is applied, Childers/Barker discloses claim 2.

216. For the reasons described for limitation 1[a], Childers/Barker discloses a central server receiving signals from network appliances containing a device identifier and device condition. Childers discloses that the device identifier is at least for a *security detector* and a *pull station*, because the disclosed network appliances include door sensors, alarms, motion detector, etc., with the aim of “*maintaining security*.” Ex. 1009 at [0012], [0059]; Ex. 1001 at FIG.10, 3:15. (pull station depicted as fire alarm).

217. Barker also expressly discloses a *smoke detector*, a *pull station*, a *carbon monoxide detector* (e.g., “monitoring devices 34 can include smoke, fire and carbon monoxide detectors”), a *security detector* (e.g., “door and window access

detectors, glass break detectors, motion detectors...”), and a *check-in monitor* (e.g., “fingerprint, facial, retinal, or other biometric identification devices,” or “conventional panic buttons, global positioning satellite (GPS) locators,...medical indicators,...”). Ex. 1010 at [0033]; *see also* Ex. 1001 at 3:44-46 (“check-in monitor” determines “failure to check-in”). It would have been obvious to implement signals from Barker’s different device types in Childers’ architecture because it would have required merely installing a known device according to its ordinary usage in the Childers/Barker architecture, without modification to Childers’ central server or Barkers Rule-Based Software, and would have yielded predictable results with a reasonable expectation of success.

- b. **3: “The method of claim 1, wherein the receiving one or more signals containing a device identifier and a device condition from one or more remote alarm monitoring systems comprises: receiving one or more signals containing a device condition of normal, fault, and supervisory from one or more remote alarm monitoring systems.”**

218. Childers/Barker discloses “receiving one or more signals containing a device condition of normal, fault, and supervisory from one or more remote alarm monitoring systems.” For the reasons described for limitation 1[a], Childers/Barker discloses a central server receiving signals from network appliances containing a device identifier and device condition. Childers specifically describes normal (e.g., “normal state”), fault (e.g., “environmental sensor alarms,” “motion alarm”), and

supervisory (e.g., appliance is “offline” or “missing in action”). Ex. 1009 at [0138]-[0139], [0125], [0059]-[0061].

D. CLAIMS 4-10 – RETRIEVING ENHANCED INFORMATION

- a. **4: “The method of claim 1, wherein the retrieving enhanced information based on the device identifier and the device condition comprises: retrieving enhanced information including one or more sounds based on the device identifier and the device condition.”**

219. Childers/Barker discloses claim 4.

220. For the reasons described for limitation 1[b], Childers/Barker discloses retrieving enhanced information based on the device identifier and the device condition. While Childers does not expressly disclose enhanced information including sound, adding “sound” to Childers’ enhanced information would have been obvious. As I described in Section V.C, there is nothing inventive about a “sound” alert; audible alarms were well known in the art long before 2009. Indeed, Barker discloses a central server transmitting a *sound* alert: “[t]he device processing server may also instigate action, such as *sounding an audible alarm*.” Ex. 1010 at [0079], [0055]; cls.22, 43. It would have been obvious to implement Barker’s audible alarms with enhanced information of Childers, as it would have merely applied a known technique (audible alarms) to a known display (Childers’ map and

icons) ready for improvement to yield predictable results with a reasonable expectation of success.

- b. **5: “The method of claim 4, wherein the retrieving enhanced information including one or more sounds based on the device identifier and the device condition comprises: retrieving enhanced information including one or more sounds organized on one or more graphical images based on the device identifier and the device condition.”**

221. Childers/Barker discloses claim 5. As described for claim 4, Childers/Barker discloses retrieving sounds based on the device identifier and the device condition. Childers’ enhanced information can also be linked to other enhanced information. Ex. 1009 at [0116], [0131]. In view of these disclosures, it would have been obvious to implement retrieving enhanced information with sounds, where the sounds are organized on the enhanced information, based on a device identifier and device condition. A POSITA could have easily implemented audible alarms as a result of clicking an icon. Doing so would have amounted to applying a known technique (audible alarms) to a known display (Childers’ map and icons) ready for improvement and would have yielded predictable results with a reasonable expectation of success.

- c. **6: “The method of claim 1, wherein the retrieving enhanced information based on the device identifier and the device condition comprises: retrieving enhanced information including one or more communication links based on the device identifier and the device condition.”**

222. Childers/Barker discloses claim 6. For the reasons described for limitation 1[b], Childers/Barker discloses retrieving enhanced information based on the device identifier and the device condition. Childers’ central server also stores “[n]etwork appliance configuration data” including, *e.g.*, parameters such as “contact data” and “email lists” and “alert lists.” Ex. 1009 at [0141]. Childers’ icons further “may be arranged in a manner indicative of...*responsible party*.” *Id.* at [0116]. Contact data, email lists, alert lists, and responsible party information are *communication links* corresponding to a particular network appliance and alarm condition. Ex. 1001 at 7:10-12 (a “communication link” may include “a phone number, an email account, an instant message account, an IP address, or the like”).

- d. **7: “The method of claim 6, wherein the retrieving enhanced information including one or more communication links based on the device identifier and the device condition comprises: retrieving enhanced information including one or more communication links organized on one or more graphical images based on the device identifier and the device condition.”**

223. Childers/Barker discloses claim 7. As described for claim 6, Childers/Barker disclose retrieving communication links based on a device identifier

and condition. Childers also discloses icons—graphical images—that “link to other images, displays, and data” such that “clicking on the icon may display another mapping, a data table, and an icon configuration.” Ex. 1009 at [0131]. Childers also expressly discloses that the icons “may be arranged in a manner indicative of...*responsible party*.” *Id.* at [0116]. Because the icons can link to other data *and* can indicate a responsible party, it would have been obvious to include links to a responsible party on an icon (graphical image). *Id.* at [0116], [0121]. This would have merely involved a POSITA implementing functionality already disclosed in Childers in the manner disclosed with predictable results and a reasonable expectation of success.

- e. **8: “The method of claim 1, wherein the retrieving enhanced information based on the device identifier and the device condition comprises: retrieving enhanced information including written information based on the device identifier and the device condition.”**

224. Childers/Barker discloses claim 8. For the reasons described for limitation 1[b], Childers/Barker disclose retrieving enhanced information based on the device identifier and the device condition. Childers further discloses that the enhanced information can include written information such as, *e.g.*, (1) “environmental sensor readings” that “may be displayed on the map views as

part of the icon”; (2) sensor values in the correct unit of measurement; or (3) flags with labels. Ex. 1009 at [0134], [0130].

- f. **9: “The method of claim 8, wherein the retrieving enhanced information including written information based on the device identifier and the device condition comprises: retrieving enhanced information including date/time information, account information, premises information, device information, condition information, support information, contact information, linked information, and instructional information based on the device identifier and the device condition.”**

225. I understand Petitioner proposes to construe this term to require that each of the written information are retrieved. In the ADT Matter, the court only required that one of the types of written information is retrieved. Regardless of the construction that is applied, Childers/Barker discloses claim 9.

226. As discussed for claim 8, Childers/Barker discloses retrieving written information based on the device identifier and the device condition. In addition, for example, Childers’ written information can include *account information* (e.g., “password and access data”), *contact information* (e.g., “contact data,” “email lists”), *condition information* (e.g., “threshold data”), and *instructional information* (e.g., “algorithms”). Ex. 1009 at [0141]; *see also* Ex. 1001 at 9:1-3 (“instructional” information can be a “note”). The table in FIG.13C (below) also lists *premises information* (e.g., “LOCATION”), *device information*, (e.g., “MODEL”) and can

include *date/time* and *support information* (e.g., “historical data of events” including “time”), and *linked information* (e.g., “available images”). *Id.* at [0201]-[0202]; *see also id.*, [0100] (data such as “type, location, alarm state, configuration, parameter value, or organization, among others” can be displayed as a table), [0142], FIGs.9A-9B, 13B; *see also* Ex. 1001 at 8:62-9:3 (“linked” information includes a file attachment, “support” information includes “archival data”).

	LOCATION	MODEL	VALUE #1	VALUE #2	STATUS
NETWORK APPLIANCE #1	A	100	AA	BA	OFF
NETWORK APPLIANCE #1	A	100	AB	BB	ON
NETWORK APPLIANCE #1	B	300	AC	BC	ON
NETWORK APPLIANCE #1	B	400	AD	BD	ON
NETWORK APPLIANCE #1	C	200	AE	BE	ON

FIG. 13C

227. To the extent Patent Owner argues any of the recited written information is not disclosed, each would have been obvious in view of Childers, as it would have required implementing known written information according to ordinary usage as needed for specific applications. To the extent any modification would have been necessary, it would have been straightforward for a POSITA to implement in Childers/Barker architecture, with a reasonable expectation of success.

- g. **10: “The method of claim 8, wherein the retrieving enhanced information including written information based on the device identifier and the device condition comprises: retrieving enhanced information including written information organized on one or more graphical images based on the device identifier and the device condition.”**

228. Childers/Barker discloses claim 10 for the reasons described for claims 7-8. It would have been obvious to organize written information on graphical images, such as icons, in Childers/Barker. Ex. 1009 at [0131], [0116], [0121]. This would have merely involved a POSITA implementing functionality already disclosed in Childers/Barker in the manner disclosed with predictable results and a reasonable expectation of success.

E. **CLAIMS 11-13 – DETERMINING COMMUNICATIONS METHOD AND DESTINATION**

- a. **11: “The method of claim 1, wherein the determining one or more communication methods and communication destinations based on the device identifier and the device condition comprises: determining one or more communication methods of email, text message, instant message, website link, phone, and mail based on the device identifier and the device condition.”**

229. I understand Petitioner proposes to construe this term to require that each of the six types of communication methods are determined. In the ADT Matter, the court only required that one of the communication methods be determined. Regardless of the construction that is applied, Childers/Barker discloses claim 11.

230. As described for limitation 1[c-1], Childers/Barker discloses determining a communication method based on the device identifier and device condition. In addition, Childers discloses determining methods such as a *website link* (e.g., “internet browsers,” Ex. 1009 at [0096]-[0097]) and *email* (a form of *mail*) (e.g., email lists,” *id.* at [0141]).

231. Barker also expressly discloses that a central server may communication with destinations via a *website link*, *email* (or *mail*), *text messages*, *instant messages*, and *phone communications*: “utilizing electronic messaging or Web access, via wireless transmissions utilizing the wireless application protocol, short message services, audio transmission, and the like.” Ex. 1010 at [0046]. It would have been obvious to implement Barker’s (or any recited) communication methods in Childers/Barker because it would have required a POSITA merely implementing known communication protocols according to their ordinary usage as needed for specific applications and would have yielded predictable results with a reasonable expectation of success.

- b. **12: “The method of claim 1, wherein the determining one or more communication methods and communication destinations based on the device identifier and the device condition comprises: determining one or more device communication destinations of a personal computer, a phone, a mobile device, a display, and a custom device based on the device identifier and the device condition.”**

232. I understand Petitioner proposes to construe this term to require that each of the five types of communication destinations are determined. In the ADT Matter, the court only required that one of the communication destinations be determined. Regardless of the construction that is applied, Childers/Barker discloses claim 12.

233. As described for limitation 1[c-1], Childers/Barker discloses determining a communication destination based on the device identifier and device condition. In addition, under Childers/Barker, destinations can be *any* device with a processor, network interface, and user interface, including “monitors, keyboards, wireless devices, handheld devices, and a mouse.” Ex. 1009 at [0090]-[0097].

234. To the extent Patent Owner argues any recited communication destination is not disclosed, Barker also expressly describes each of the recited types of devices: “personal computers, hand-held computing devices, wireless application protocol enabled wireless devices, cellular or digital telephones, digital pagers, and the like,” each of which could be a “custom” device. Ex. 1010 at [0046]. It would

have been obvious to implement Barker's devices in the Childers/Barker architecture because it would have required communications with well-known devices according to their ordinary usage as needed for specific applications. To the extent any modification would have been necessary, it would have been straightforward for a POSITA to implement in the Childers/Barker architecture, with a reasonable expectation of success. A POSITA would have been motivated to implement each device to maximize the ability to notify users of alarms and alerts—the aim of Childers.

- c. **13: “The method of claim 1, wherein the determining one or more communication methods and communication destinations based on the device identifier and the device condition comprises: determining one or more entity communication destinations of an authority, a first responder, a service company, an owner, a manager, a staff, an occupant, a supplier, a customer, a neighbor, and a custom entity based on the device identifier and the device condition.”**

235. I understand Petitioner proposes to construe this term to require that each of the recited types of communication destinations are determined. In the ADT Matter, the court only required that one of the communication destinations be determined. Regardless of the construction that is applied, Childers/Barker discloses claim 13.

236. As described for limitation 1[c-1], Childers and Barker each disclose determining a communication destination based on the device identifier and device condition. In addition, Childers discloses that a communication destination can be a specific user with a user-id and password, such as a “dedicated technician[]” monitoring security/environmental conditions. Ex. 1009 at [0007]-[0013], [0128], [0061]. Depending on the type of alarm (environmental or security), the type of business (small/large or contractor/owner), or the technician’s seniority (manager or staff), it would have been obvious that these dedicated technicians could serve roles such as *an authority, a first responder, a service company, an owner, a manager, a staff, a supplier, a customer, or a custom entity*, at least as those terms are used in the ’817 patent.

237. It would have also been obvious that the destinations could include an *occupant* or a *neighbor*, as those terms are used in the ’817 patent. Ex. 1001 at 12:25-36; Ex. 1009 at [0141] (disclosing “alert lists,” “contact data,” and “email lists”). If a network appliance detects an environmental hazard, for example, a POSITA would have been motivated to include neighboring businesses in an email list or alert list. For instance, if applied in a mixed-use building containing lodging and retail shops, the system might notify all of the listed entities in case of the detection of fire or other environmental hazards. Barker also expressly discloses destinations based on

a user's *role* and *location*, including a "*premises owner's* mobile device," "an *on-site* monitor" (occupant), "public authorities," or "emergency personnel." Ex. 1010 at [0054]-[0055].

238. There would have been nothing unpredictable in using the Childers/Barker architecture to communicate to any of the recited individuals that may have interest in the system. To the extent any modification would have been necessary, it would have been straightforward for a POSITA to implement in the Childers/Barker architecture, with a reasonable expectation of success.

F. CLAIM 14 – DISPATCHING

- a. 14: "The method of claim 1, wherein the dispatching the enhanced information to the one or more communication destinations using the one or more communication methods comprises: dispatching the enhanced information automatically without requiring operator intervention to the one or more communication destinations using the one or more communication methods."

239. Childers/Barker discloses claim 14. For example, Childers discloses that dispatching occurs without operator intervention: "data is automatically delivered, as seen in a block 104, when the client machine is connected." Ex. 1009 at [0089], [0123].

G. CLAIMS 15-16 – RECEIVING ENHANCED INFORMATION

- a. **15: “The method of claim 1, further comprising: receiving enhanced information, one or more communication methods, and one or more communication destinations via a user interface that is remotely accessible.”**

240. Childers/Barker discloses claim 15.

241. Childers discloses a remotely accessible user interface, including a personal device, for receiving enhanced information for display. Ex. 1009 at [0102], [0107], [0111], FIG.1, 2A-2C, [0055]. As described for limitation 1[c-2], the client device receives image data from the central server. The remote user interface can receive user “manipulation” of data, including map configurations, and user configuration information, including communication methods and destinations: “client may manipulate data on the server to alter...network appliance associations...and network application configuration data....” Ex. 1009 at [0098], [0141] (configuration information include “email lists” and “alert lists” and “password and access data”).

242. To the extent Patent Owner argues Childers/Barker does not disclose this limitation, Childers/Barker renders it obvious. It would have been a straightforward design choice to allow a user to provide enhanced information and indicate a preference of communication destination and method via a user interface. To the extent any modification would have been necessary, it would have been

straightforward for a POSITA to implement in the Childers/Barker architecture, with a reasonable expectation of success.

- b. **16: “The method of claim 1, further comprising: receiving one or more communication methods and one or more communication destinations from data of a personal device.”**

243. Childers/Barker discloses claim 16 for the same reasons explained for claim 15.

XI. SECONDARY CONSIDERATIONS

244. I understand the Patent Owner argued during prosecution that the claimed invention met a long-felt need, citing to a paper entitled “Critical Information for First Responders, Whenever and Wherever It Is Needed,” and stating “[j]ust after the events on 9/11/2001, the report noted that: ‘In order to enhance the safety and effectiveness of firefighting operations in buildings containing modern fire alarm systems, we need to improve the type of information that is made available to the fire service, the means by which it is presented, and the channels through which it is distributed. More timely information on the state of the fire and the building environment will lead to better tactical decisions by the fire service.’ The present invention provides a solution to that long-noted deficiency in current technologies.” Ex. 1003 at 56-57. However, in my opinion, there was no such long-felt need at the time the ’817 patent was filed. There is no evidence that the

Challenged Claims solved this problem after 2001 at least because the intervening prior art cited herein disclosed each and every limitation of the Challenged Claims years before the alleged priority date of the '817 patent. Moreover, the prior art cited herein (and known in the art generally) provided “more timely information” in response to alarms and information about the “building environment.” Thus, in my opinion, Patent Owner’s argument does not support the non-obviousness of the Challenged Claims.

245. Should the Patent Owner put forth any other alleged evidence of secondary considerations in connection with the '817 patent, I reserve the right to consider such evidence, to consider whether any such evidence has a nexus to any claims of the Challenged Patent, and to update my analysis.

XII. CONCLUSION

246. All statements made herein of my own knowledge are true, and all statements made on information and belief are believed to be true. I further understand that willful false statements and the like are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code. I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 30, 2022.



Appendix A

deliverENow.

NEW YORK, NY

Online delivery system: Developed a proof of concept prototype of online delivery system. This consisted of a stock clerk server written for Windows CE (Clio) with a CDPD network connection. It demonstrated how purchase and delivery information would be sent to an in-store stock person who prepares them for pickup by a member of the deliverENow courier network. Provided strategic technical advice. Served on board of advisors. Wrote technical specification of business and logistical components of the system. 2000.

Togglethis.

New York, NY

Animation distribution system: Developed critical components of initial version of email-delivered animation system. Components included MacroMedia Director Xtras as well as encryption functions. Developed tools to distribute and manage Togglethis's content, DTG built a custom UNIX email list-server. This server allowed Toggle administrators to create groups, upload episodes, and schedule the delivery of their content. Developed system architecture and language specification for the next version of the IC Engine, which drives the characters. 1998-1999.

JuniorNet.

BOSTON, MA

Children's on-line service: Designed, developed and lead the implementation of a large scale network system for delivery of children's entertainment and education content. Worked with the president and other key players to fit a technology strategy to corporate goals. System is required to serve from 200,000 to 1,000,000 subscribers and be supportable over three to five years. All project goals met within a \$1,000,000+ budget. 1997-2000.

One Click Charge.

NEW YORK, NY

Provide a wide range of consulting services starting with technology evaluation for the principal investor. Provided services in the areas of product definition, team formation and implementation strategy. Developed significant components of a substantial Internet micropayment and authentication system. 1998-2000.

Swatch.

WEEHAWKEN, NJ

Ticketing system: Implemented a radio frequency identification (RFID) based system for providing access to the 1998 Goodwill Games utilizing RFID tagged wristwatches. 1998-1999.

Instant Video Technologies, Inc./Burst.com

SAN FRANCISCO, CA

Burstware --. Designed and developed a series of products to deliver digital video and audio materials over wide-area internet using consumer grade computers. Products were designed to fit within the client's existing patent portfolio. 1995-1997.

Technical evaluation --. Provided technology strategy and evaluation services and acted as Technology Director. 1995-1997.

Assurenet.

BETHESDA, MD

Internet Insurance system --. Designed and developed a system for utilization of the Internet for the distribution and control of insurance agent support software. System can handle tens of thousands of simultaneous users. Member of Board of Directors. 1995-2002.

New Zealand Antarctic Project (NZAP) and US Antarctic Program (USAP).

ANTARCTICA

Penguin Weighbridge -- Designed, developed, and deployed system for tracking the comings and goings, weights, and Ids of Adelie penguins in their natural environment on three colonies on Ross Island, Antarctica. Systems run continuously for months in adverse conditions. System was upgraded and replaced in 2016. 1994-present.

Electronic Digital Documents, Inc.

NEW YORK, NY

Check Image Compression system --. 1995-1999.

American Veterinary Identification Devices, Inc.

NORCO, CA

AVID reader -- Designed and developed digital computer components of radio frequency identification system. Work involved imbedded microcontrollers and real-time digital signal processing in very noisy environment. Designed communications protocols including encryption and error checking schemes. Product in high volume (50,000 unit) production. 1988-1995.

Amprobe Instrument, Inc.

LONG ISLAND, NY

REMCON tester -- Designed and implemented product life-cycle test fixture for a new and innovative solid state switch. Test fixture used by Underwriters Labs for approval. 1988.

Personal Computer Card Corporation

NEW YORK, NY

Smart Cards -- Designed smart card reader/writer system. Performed general design and component selection and wrote software for smart card communications. System design implemented in commercial product. 1987.

The Dun & Bradstreet Corporation

NEW YORK, NY

Voice editing systems -- Designed and built all parts of four generations of interactive voice editing systems. Editing systems produce output used in extensive, high quality speech synthesis system that is part of larger information delivery system. The systems are built on networks of computers in a variety of programming languages and systems. The system involved interactive user interfaces, screen windows, signal processing, and voice file systems. 1982-1991.

1997-2001

Co-Founder, Director and CTO

I-RECALL, INC.

NEW YORK, NY

Co-founded a company that developed software to enable note-taking and linking of notes to streaming media. Used platforms such as PalmPilot and CrossPad for note-taking and provided time-stamped links to audio and video media. Company sold to a focus group company.

1996-1999

Co-Founder, Director, CTO & Principal Product Designer

SOLILOQUY, INC.

NEW YORK, NY

Natural language interfaces to databases: Co-founded in 1996 a company to provide next generation interfaces to structured databases. Developed prototype system using speech recognition and speech synthesis to provide access to music and ecommerce databases. Raised \$1.5 million in angel investments. Company has raised a total of \$8 million through a variety of institutional and individual investors. Hired replacement CTO and exited company in 1999.

1991-1992

President & Principal Product Designer

SIMPLICITY COMPUTING, INC.

NEW YORK, NY

Co-founded in 1991 a computer peripherals manufacturing company concentrating on portable products with international mass-market appeal. Main product: Simplicity Portable Drive, an IBMPC parallel port connected, portable disk storage system. Marketed domestically and in 25+ countries. Products marketed direct via telemarketers, trade shows, sales reps, and national advertising. Products distributed through dealers, distributors and national catalog houses. Company employed 10 people.

- Wrote business plan and raised \$350,000 startup funding
- Established marketing plans
- Directed marketing of products in trade shows, national advertisements and focus groups
- Managed employees
- Designed hardware and software for products
- Supervised hardware & software implementation teams
- First units shipped less than six months from start of project
- Supervised all aspects of manufacturing and testing process
- Contracted with four manufacturing facilities and many suppliers for production
- Supervised and established call-in customer support services

1989-1999

President & CEO

MEASUREMENT & CONTROL PRODUCTS, INC.

NEW YORK, NY

Founded in August 1989 an electronic products development company. M&CP designs, develops, markets and sells its own products through retail, wholesale and catalog channels domestically and abroad. All manufacturing is contracted. Company was profitable in its first year of operation.

Flagship product:

BitView -- Hand held RS-232 data communications diagnostic monitor. Invented, developed and produced hardware and software. Developed and oversaw implementation of marketing strategies, budgets, and business plans. Product currently in third production run.

education

1980-1993

COLUMBIA UNIVERSITY

NEW YORK, NY

Ph.D. in Computer Science, May 1993,

Thesis: *Mixed Distance Measures for the Optimization of Concatenative Vocabularies in Speech Synthesis.*

MPhil in Computer Science, December 1989.

MS in Computer Science, December 1987.

BA in Physics, Columbia College, May 1984.

teaching positions

1997

COLUMBIA UNIVERSITY

NEW YORK, NY

Adjunct Professor, Computer Science.

Advanced undergraduate course: Artificial Intelligence.

1989

COLUMBIA UNIVERSITY

NEW YORK, NY

Graduate Lecturer, Computer Science.

Advanced undergraduate course: Software Design. Taught 68 advanced undergraduates. Supervised two teaching assistants. Students implemented full spreadsheet application under UNIX.

1984-1985

CITY UNIVERSITY OF NEW YORK

NEW YORK, NY

Adjunct Professor, Experimental Psychology.

Graduate-level course: Computer Methods in Experimental Psychology.

publications and patents

2010

Michael L. Beigel, Nathaniel Polish, Steven R. Frank, and Robert E. Malm. Electronic Identification System with Improved Sensitivity. United States Patent 7,737,821B2. June 15, 2010.

2009

Silbernagl, Martin and Polish, Nathaniel. Learning Fare Collection System for Mass Transit. United States Patent 7,568,617. August 4, 2009.

2009

Beigel, Michael L.; Polish, Nathaniel; Frank, Steven R.; Malm, Robert E. Electronic identification system with improved sensitivity. United States Patent 6,472,975. October 29, 2002.

2002

Nathaniel Polish. Bilateral speech system. Speech dialogs for database access. United States Patent 6,430,531. August 6, 2002.

1999

Nathaniel Polish. System and method for distributing and managing digital video information in a video distribution network. United States Patent 5,963,202. October 5, 1999.

1993

Michael L. Beigel, Nathaniel Polish and Robert E. Malm. Multi-Mode Identification System. Fundamental RFID technology. United States Patent 5,235,326. August 10, 1993.

1991

Nathaniel Polish. Mixed Distance Measures for Synthetic Speech Evaluation. In Proceedings of ICASSP-91, Toronto, Canada, 1991.

1988

Nathaniel Polish. A Distributed Signal Processing Facility for Speech Research. In Proceedings of AVIOS88, San Francisco, CA. October 4-6 1988.

1987

Nathaniel Polish. Mixed Distance Measures for Optimizing Concatenative Vocabularies for Speech Synthesis: A Thesis Proposal. Columbia University Department of Computer Science technical report number CUCS-310-87, 1987.

1983

M. Morris, N. Polish, B. Zuckerman, and N. Kaifu. The Temperature of Molecular Gas in the Galactic Center Region. The Astronomical Journal, 88(8):1228-1235, August 1983.

**research
interests**

Computer Speech, Distributed Systems, Interactive Environments. Software Engineering, Systems Engineering, Technology Policy. Knowledge-Based Approaches to Signal Processing. Computational Physics, Non-Linear Dynamics.

**professional
societies**

International Society for Electrical and Electronics Engineers (IEEE), Association of Computing Machinery (ACM), American Association for the Advancement of Science (AAAS).

other interests

Foreign Policy, Political Science, Long Distance Bicycling, United States Space Program.

- grants**
- AT&T Special Projects Grant of \$25,000 for synthetic speech, 1986.
 - Financial support for Ph.D. work was provided by the New York State Science and Technology Foundation Center for Advanced Technology in Computers and Information Systems at Columbia University.
 - Santa Fe Institute Complex Systems Summer School, 2003. Month-long workshop in agent-based models, non-linear systems, and complexity.

1982-present

Technology development projects

Some technology development projects have included:

Wildlife Tracking Systems -- Implemented a remote monitoring system to track and weigh Adelie penguins on Ross Island, Antarctica. System was debugged on-site and made to function in adverse environmental circumstances. 1994-1997, 2016.

Internet Systems -- Implemented a LINUX Internet server with FTP and gopher services. Installed and Internet client for IBM/PC platform. 1994-1995.

Image Compression Technology -- Developed proof-of-concept system for a system to compress images of checks to very small file size. 1994.

Biomedical Systems -- Implemented a large biomedical system used in patient diagnostics. Provided all necessary materials for Food and Drug Administration compliance. 1992-1993.

Synthetic Speech Systems -- Implemented and supported several generations of synthetic speech systems for commercial as well as research purposes. 1985-1999.

Graphics -- Developed high-speed drivers for several graphical devices and evaluated their applicability for interactive uses. Devices included: Vectrix, RAMTEK, Apple Lisa, and IBM Enhanced Graphic Adapter. 1983-1987.

Voice Boards -- Specified function requirements for several generations of high quality voice boards for Q-bus (PDP-11), Apple, MultiBus, and IBMPC bus. Developed high-speed drivers for each of the boards. 1982-1986.

Video Disk and Touch Screens -- Developed experimental interactive system utilizing computer controlled video disks and touch screens. 1982.

1994-present

Intellectual property projects

A separate document detailing intellectual property projects is available on request.

tools

Languages commonly used:

Pascal 1980-1988

C 1985-present.

Other languages used: C++, Lisp, Java and Python .

Assembler:

Intel 8048, 8051, 8088-pentium

Motorola 680xx

TI 320xx signal processors

Zilog Z8, Z80, PIC

Protocols include:

TCP/IP, UDP, RPC and NFS

Operating systems commonly used:

UNIX, MSDOS, Windows and p-system.

In circuit emulators.

Database tools.

ARM processors for embedded systems.

PC bus interfacing.

**contact
information**

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Academic and business references available upon request.



Nathaniel Polish, Ph.D. ♦ Daedalus Technology Group, Inc. ♦ polish@dtgroup.com

Summary of Experience in Intellectual Property Matters, as of June 2022

Date	Case and Jurisdiction	Work Product	Counsel, Nature of Case and Additional Notes
6/1/2021-11/2021	<i>USC IP Partnership, L.P., v. Facebook, Inc.</i> Civil Action No. 6:20-cv-00555-ADA In The United States District Court for the Western District of Texas Waco Division	Expert reports on infringement and invalidity. Depositions.	Retained by Cooley. (contact: Phillip E. Morton) representing Facebook. This is a patent dispute involving user interfaces and websites. This case was dismissed.
6/1/2021-present	<i>WSOU Investments, LLC D/B/A Brazos Licensing and Development v. NEC Corporation</i> , Case No. 6:20-cv-00923-ADA <i>WSOU Investments, LLC D/B/A Brazos Licensing and Development v. NEC Corporation</i> , Case No. 6:20-cv-00924-ADA <i>WSOU Investments, LLC D/B/A Brazos Licensing and Development v. NEC Corporation</i> , Case No. 6:20-cv-00925-ADA <i>WSOU Investments, LLC D/B/A Brazos Licensing and Development v. NEC Corporation</i> , Case No. 6:20-cv-00926-ADA <i>WSOU Investments, LLC D/B/A Brazos Licensing and Development v. NEC Corporation</i> , Case No. 6:20-cv-00927-ADA In The United States District Court for the Western District of Texas Waco Division	Declarations in support of claim construction.	Retained by Kasowitz, Benson, Torres LLP. (contact: Jack Shaw) representing WSOU Investments, LLC. This is a patent dispute involving a number of networking technologies. This case is ongoing.
3/1/2021-present	<i>WSOU Investments, LLC D/B/A Brazos Licensing and Development v. Arista Networks, INC.</i> Case No. 6:20-cv-1083-ADA In The United States District Court for the Western District of Texas Waco Division	Declarations in support of claim construction.	Retained by Susman Godfrey. (contact:Shawn Blackburn) representing WSOU Investments, LLC. This is a patent dispute involving a number of networking technologies. This case is ongoing.
4/1/2019-7/5/2019	<i>Samsung Electronics Co., LTD and Samsung Electronics America, Inc., Petitioners v. SpeakWare, Inc.,</i> Case IPR2019- XXXX, US Patent No. 6,397,186 United States Patent and Trademark Office	Declarations in support of invalidity in the context of an IPR.	Retained by Arnold & Porter (contact: Jeffrey Miller) representing Samsung. This is an IPR related to patents for speech interfaces. This case is closed.
12/01/2020-present	<i>Open Text Corp., v. Hyland Software, Inc.</i> Case No. 8:20-cv-02116-DOC-ADS In the United States District Court for the Central District of California Southern Division	Declarations supporting claim construction. Deposition.	Retained by King & Spalding LLP (contact: Brit Davis) representing Open Text. This is a patent dispute involving technology related to digital content management. This case is ongoing.

5/2020 - 12/2021	<i>Nice LTD and Mattersight Corp., v. Callminer, Inc.</i> Case No. 18-2024-RGA-SRF In the United States District Court for the District of Delaware	Declarations.	Retained by DLA Piper LLP. (contact: Tiffany Miller) representing Callminer, Inc. This is a patent dispute involving technology related to telephony integration. This case was settled.
10/2019- 6/23/2021	<i>Freshub, Inc., Freshhub, LTD., v. Amazon.com inc., Amazon Digital Services, LLC, Prime Now, LLC, Whole Foods Market Inc., Whole Foods Market Services, Inc.,</i> Case A-19-CV-00885-ADA. In the United States District Court for the Western District of Texas	Expert report on infringement; Expert report on validity; depositions; testimony at trial.	Retained by Kramer Levin (contact: Paul Andre) representing Freshub. This is a patent dispute concerning smart kitchen voice technologies. Testified at trial.
3/2020 - 5/2022	<i>Broadcom Corporation, et al., v. Netflix, Inc.</i> Case No. 3:20-cv-04677-JD In the United States District Court for the Northern District of California San Francisco Division	Expert reports	Retained by Thompson Knight (contact: Nadia Haghighatian). This is a patent case involving streaming content. This case is ongoing, but I am no longer involved.
06/2019 - present	<i>Roku, Inc.</i> petition for <i>inter partes</i> review of US 7,821,505 Attorney Docket No. 48331.3	Declarations, reply declarations, and a deposition.	Retained by Haynes and Boone (contacts: Raghav Bajaj and Philip Woo) representing Roku, Inc. This is a patent case involving user interfaces on hand held remote controls. This case is ongoing.
04/2019- present	<i>Vimeo, Inc and IAC/InterActiveCorp, v. British Telecommunications plc, IPR2019-00833 and British Telecommunications plc. V. IAC/InterActiveCorp et al.,</i> Case 1:18-vc-003366-VAC-CJB (D. Del.)	Filed several declarations.	Retained by McDonnell Boehnen Hulbert & Berghoff (contact: Jeffrey P. Armstrong) representing British Telecom. This is a patent case in district court as well as an IPR. This case is ongoing.
05/2018- 12/2020	<i>Retailmenot, Inc. v. Honey Science Corp.</i> Case no. 18-937(CFC)(MPT) In the United States District Court for the District of Delaware	Expert declarations, help with infringement contentions, expert report, and deposition.	Retained by Kirkland & Ellis (contact: Christopher DeCoro) representing Retailmenot. This is a patent case involving ecommerce websites for shopping. The case was settled.
01/2017- 01/2020	<i>Koninklijke Philips N.V. et al. v. Acer Inc. et al.,</i> Case No. 15-1170-GMS <i>Koninklijke Philips N.V. et al. v. ASUSTeK Computer Inc. et al.,</i> Case No. 15-1125-GMS <i>Koninklijke Philips N.V. et al. v. Double Power Tech. et al.,</i> Case No. 15-1130-GMS <i>Koninklijke Philips N.V. et al. v. HTC Corp. et al.,</i> Case No. 15-1126-GMS <i>Koninklijke Philips N.V. et al. v. Southern Telecom Inc.,</i> Case No. 15-1128-GMS <i>Koninklijke Philips N.V. et al. v. Visual Land Inc.,</i> Case No. 15-1127-GMS <i>Koninklijke Philips N.V. et al. v. YiFang USA, Inc.,</i> Case No. 15-1131-GMS In the United States District Court for the District of Delaware	Expert reports and depositions.	Retained by Fitzpatrick, Cella, Harper & Scinto and Venable (contacts: Christopher Gerson or Jonathan Sharret) representing Koninklijke Philips N.V. and U.S. Philips Corporation. This was a patent dispute. The case ended in settlement.
03/2018- 02/2019	<i>Alarm.com et al v. SecureNet Technologies LLC,</i> Case No. 1:15-cv-00807-GMS In the United States District Court for the District of Delaware	Four expert reports on invalidity and non-infringement; analysis of source code; two depositions; testimony at trial.	Retained by Cooley, LLP (contact: Erik B. Milch) representing SecureNet Technologies. This case was a patent case involving home security products and internet technologies. I was handling both non-infringement and invalidity. We prevailed at trial.

01/2018-09/2018	<i>Ameranth, Inc. v. Pizza Hut, Inc., et al.</i> , Case No. 11-cv-1810 JLS In the United States District Court Southern District of California	Expert report and deposition.	Retained by Baker Botts, LLP (contact: Michael E. Knierim) representing Grubhub, Inc. and Seamless North America, LLC. This was a patent case involving data processing in the hospitality industry. I was asked to provide opinions concerning invalidity on a variety of grounds. We prevailed on a motion for summary judgment of unpatentability.
04/2018-present	<i>MModal Services Ltd. v. Nuance Communications, Inc.</i> Case No. 1:18-cv-00901-WMR In the United States District Court for the Northern District of Georgia Atlanta Division	Declaration regarding claim terms; deposition.	Retained by Weil, Gotshal & Manges LLP (contact: Sudip Kundu) representing Nuance Communications, Inc. This is a patent case involving speech recognition technology. I have prepared a report regarding certain claim terms. This case is ongoing.
04/2018-present	<i>BookIT Oy Ajanvarauspalvelu v. Bank of America Corporation and Bank of America, N.A.</i> Case No. 3:17-cv-02557-K In The United States District Court for the Northern District of Texas Dallas Division	Declarations regarding claim terms.	Retained by Winston & Strawn, LLP representing Bank of America. This is a patent case. I am involved with a number of invalidity issues. This case is ongoing.
08/2017-present	<i>Darren Pederson v. Apple Inc.</i> Case No. 1:12-cv-235530 In the Santa Clara County Superior Court	Declaration in support of opposition to class certification; deposition.	Retained by Morrison & Foerster LLP (contact: David M. Walsh) representing Apple, Inc. This is a class action case regarding the operation of Apple TV products. I am involved with a number of issues around class certification.
01/2017-present	<i>Koninklijke Philips N.V. et al. v. Acer Inc. et al.</i> Case No. 15-1170-GMS In the United States District Court for the District of Delaware		Retained by Venable LLP representing Koninklijke Philips N.V. et al.
03/2016-01/2018	<i>Doug Baird, Goug Hesse and Bob Schmitt on Behalf of Blinkmind, Inc. v. Joe Baird, Nathan Stratton, Michael Tessler, Exario Networks Inc, and Broadsoft, Inc.</i> Case No. 2015-16576 In The District Court of Harris County, TX, 270th Judicial District.	Analysis of source code and documents related to allegations of copying. Expert report; deposition.	Retained by Cooley LLP (contact: Jon Graves) representing Broadsoft. This case involves allegations of theft of trade secrets and copying. The case settled.
11/2015-06/2017	<i>Phoenix Technologies LTD. v. VMware, Inc.</i> Case No. 15- cv-014140-HSG In The United States District Court North District of California	Expert report regarding a number of issues having to do with issues related to the definition of terms; deposition; testimony at trial.	Retained by Cooley LLP (contact: Whitty Somvichian) representing Phoenix Technologies. This is a contracts matter involving copyright. I offered opinions related to the meaning of certain terms used in a contract.
05/2015-05/2015	<i>Chestnut Hill Sound, Inc. v. Apple Inc.</i> Case No.15-cv-261 (D. Del.) In The United States District Court for the District of Delaware	Declaration in support of Apple's opposition to preliminary injunction.	Retained by Desmarais, LLP (contact: Alan Kellman) representing Apple Inc. This is a patent matter involving control of multimedia streams in home entertainment networks.
04/2015-07/2016	<i>Mobile Telecommunications Technologies, LLC v. BlackBerry Corporation</i> Case No. 3:12-cv-01652-M (N.D. Tex.) In the United States District Court for the Northern District of Texas Dallas Division	Expert report on non-infringement and invalidity; deposition; testimony at trial.	Retained by McDermott Will & Emery (contact: Leigh Martinson) representing Blackberry. I am handling invalidity as well as non-infringement. This is a patent case involving a number of issues related to smartphones and messaging. Testified at trial. We prevailed.

03/2015-03/2017	<i>WAG Acquisition LLC v. Gatty S.a.r.l. et al</i> Case No. 2:14-cv-2832-ES-JAD (D. N.J.) In the United States District Court District of New Jersey	Declarations in four IPRs; deposition.	Retained by Baker & McKenzie LLP (contacts: Kevin O'Brien and Matt Dushek) representing the defendants. This is a patent matter involving streaming media. I submitted declarations in four IPRs in this case.
02/2015-02/2017	<i>Comcast Cable Communications LLC, et al. v. Sprint Communications Company L.P. et al.,</i> Case No. 2:12-cv-0859 (E.D. Pa)	Expert report on invalidity; deposition; testimony at trial.	Retained by McGuire Woods, LLP (contact: George J. Barry III) representing Sprint Inc. This is a patent matter involving the architecture of messaging servers in a cell phone network.
12/2014-05/2015	<i>Enterprise Systems Technologies S.a.r.l. v. Apple Inc.</i> C.A. No. 1:14-cv-00765-UNA In the United States District Court for the District of Delaware	Declaration submitted for IPR.	Retained by Ropes & Gray, LLP (contact: Stefan Geirhofer) representing Apple Inc. This was a patent matter involving a district court case, an ITC case, and an IPR. The technology mobile messaging. This case settled.
11/2014-04/2015	<i>Solocron Media, LLC v. Verizon Communications Inc., et al</i> Case No. 2:13-cv-1059 (E.D. Tex.) In the United States District Court Eastern District of Texas Marshall Division	Expert report on invalidity.	Retained by Wiley Rein, LLP (contact: Scott Felder) representing Verizon. This was a patent matter. I prepared a report on invalidity and assisted with a report on non-infringement. This case terminated favorably for Verizon before I was deposed.
10/2014-02/2015	<i>Recogni Corp, LLC v. Nintendo Co. Ltd. Et al</i> Case No. 2:12-cv-01873-RAJ In the U.S. District Court Western District of Washington		Retained by Orrick, Herrington & Sutcliffe LLP (Contact: Doc Daybell) representing Nintendo Co. Ltd.
07/2014-01/2016	<i>Aylus Networks, Inc. v. Apple Inc.</i> Case No: 3:13-cv-04700-EMC. In the United States District Court Northern District of California San Francisco Division	Declarations in support of claim construction as well as summary judgment; expert reports on non-infringement and invalidity; deposition.	Retained by DLA Piper (contact: Mark Fowler) representing Apple, Inc. I was handling non-infringement as well as invalidity. This was a patent matter involving control of multimedia streams in home entertainment networks. This case was dismissed on summary judgment favorable to Apple.
5/2014-10/2014	<i>Jobdiva, Inc. v. Monster Worldwide, Inc.</i> Case no: 13 Civ. 8229 (KBF) In the United States District Court for the Southern District of New York	Declaration on infringement; deposition.	Retained by Kirkland and Ellis (contact: James Marina) representing Jobdiva. This was a patent matter involving methods of search and display of resumes. I offered a declaration that was most of an expert report. This case settled.
12/2013-06/2014	<i>Straight Path IP Group, Inc., v. LG Electronics, Inc. et.al</i> C.A. No. 1:13-cv-00933 Investigation No. 337-TA-892	Expert report on non-infringement; deposition.	Retained by Finnegan (contact: Aidan Skoyles) representing LG Electronics, Inc. This was a patent matter regarding smart televisions. This case has been stayed.
11/2013-12/2013	<i>Glaxosmithkline, LLC. v. Genentech, Inc.</i> Case No: 10-799-GMS. In the United States District Court for the District of Delaware.	Expert report on an evidentiary matter; deposition.	Retained by Desmarais (contact: Xiao Li) representing GSK. I offered opinions regarding the quality of certain metadata information associated with several files at issue in the case.
9/2013-9/2014	<i>Profectus Technology LLC, v. Huawei Technologies Co. LTD, et al.</i> Case No. 6:11-cv-00474. In the United States District Court for the Eastern District of Texas Tyler Division	Expert report on non-infringement.	Retained by Baker Botts (contact: Tammy Pennington) representing Dell. This patent matter dealt with technologies used in electronic picture frames. This case settled.

9/2013-3/2014	<i>Black Hills Media v. Samsung, LGE et al., Certain Digital Media Devices, including Televisions, Blu-Ray Disc Players, Home Theater Systems, Tablets and Mobile Phones, Components Thereof and Associated Software.</i> Investigation No. 337-TA-882. United States International Trade Commission	Expert report on non-infringement; deposition; testimony at hearing.	Retained by Finnegan (contact: Houtan Esfahani) representing LGE.
6/2013-2/2015	OpenText S.A. v. <i>Alfresco Software LTD; Alfresco Software, Inc.; and Carahsoft Technology Corporation.</i> Case No. 2:13CV320AWA/LRL. In the United States District Court for the Eastern District of Virginia.	Expert reports on infringement and validity; depositions; tech tutorial.	Retained by Cooley, LLP (contact: Frank Pietrantonio) representing OpenText My patents were dropped from trial.
05/2013-present	Hartford Fire Insurance Company v. <i>Progressive Corporation and Progressive Casualty Insurance Company.</i> Case No. 1:12- cv-02444. In the United States District Court for the Northern District of Ohio Eastern Division.	Expert report on claim construction; deposition.	Retained by Baker Botts (contact: Robert Scheinfeld) representing Hartford. I am handling both infringement as well as validity.
10/2012-04/2013	MobileMedia Ideas, LLC. v. <i>HTC Corporation and HTC America, Inc.</i> In the United States District Court for the Eastern District of Texas, Marshall Division.	Expert reports; deposition.	Retained by Desmarais, LLC (contact: Alan Kellman) representing MMI. This is a patent dispute involving user interfaces to cell phones. I am handling both infringement and validity.
10/2012-04/2014	Nokia Corporation, Nokia Inc., and Intellisync Corp v. <i>HTC. Certain Electronic Devices, Including Mobile Phones and Tablet Computers, and Components Thereof.</i> Investigation No. 337-TA-847. United States International Trade Commission	Expert reports, depositions; testimony at hearing.	Retained by Desmarais, LLC (contact: Alan Kellman) representing Nokia. This was a patent dispute involving user interfaces to cell phones. I handled both infringement and validity. My patent was dropped from the case during the hearing.
09/2012-04/2017	<i>Intellectual Ventures I LLC et al. v. AT&T Mobility LLC et al.</i> Civil Action No. 12-CV-193-LPS (D.Del.)		Retained by Baker Botts (contact: Robert Maier) representing AT&T Mobility LLC.
8/2012-10/2015	<i>Potter Voice Technologies, LLC, v. Apple Inc et al.</i> CV 1:12-cv-01096-REB-CBS In The United States District Court for the District of Colorado.	Declaration in support of summary judgment; expert reports.	Retained by Cooley, LLP (contact: Timothy Teter) representing Apple Inc. This was a patent dispute involving Natural Language Processing on smartphones. I handled both infringement and validity. This case was favorably dismissed on summary judgment.
08/2012-10/2014	OpenTV, Inc. v. <i>Netflix Inc.</i> Case No. 3:14-cv-01525 In the United States District Court for the District of Delaware	Declaration regarding a motion for summary judgment.	Retained by Kirkland & Ellis, LLP (contact: Matthew Topic) representing OpenTV. I submitted a declaration in opposition to a motion for summary judgment regarding section 101 issues.
08/2012-12/2012	<i>J2 Global Communications, Inc. v. EasyLink Services International Corp.</i> Case No. 09-4189-DDP (AJWx) In The United States District Court Central District of California Western Division.		Retained by Perkins Coie, LLP (contact: Timothy Carroll) representing EasyLink Corp. I handled both infringement and validity. This was a patent dispute regarding enterprise fax and messaging systems.

06/2012-8/2017	EasyWeb Innovations, LLC v. Twitter, Inc. Civil Action No CV 11-4550-JFB-WDW. In The United States District Court for the Eastern District of New York.	Expert reports; deposition.	Retained by Desmarais, LLC (contact: Alan Kellman) representing EasyWeb. This is a patent dispute involving messaging technologies. I am handling both infringement and validity.
06/2012	Cisco	Declaration.	Retained by Haynes and Boone, LLP (contact: Andrew Ehmke) representing Cisco. This was an IPR case and I submitted a declaration in the matter.
02/2012-06/2014	Emblaze LTD v. Apple Inc. Case No 4:11-CV-01079 SBA. In The United States District Court for the Northern District of California.	Markman tutorial; Expert report on non-infringement; tech tutorial; testimony at trial.	Retained by Greenberg Traurig, LLP (contact: James DeCarlo) representing Apple, Inc. The case was ultimately tried by DLA Piper (contact: Mark Fowler). This was a patent dispute. The case involved technology for distribution of multimedia over the Internet. The trial concluded with the jury finding no infringement.
12/2011-04/2013	Apple Inc. v. Samsung Electronics Co, LTD. Case No. CV12-00630 In The United States District Court for the Northern District of California San Jose Division.	Expert declaration; deposition.	Retained by Gibson Dunn, LLP (contact: Joshua Furman) representing Apple, Inc. This is a patent dispute involving multi-database search on a mobile device. I am handling both infringement and validity. We received a pre-trial injunction on the products in question.
12/2011-08/2012	NorthMobile Tech, LLC v. Simon Property Group, Inc. Case No. 3:11-cv-287 In The United States District Court Western District of Wisconsin.	Expert report; declarations.	Retained by Perkins Coie (contact: Timothy Carroll) representing Simon Property Group. This was a patent dispute involving a location based marketing application on smartphones. I am handling both infringement and validity. We prevailed pretrial.
11/2011-09/2015	Oasis Research, LLC v. ADrive LLC, et al. Case No. 4:10-CV-435-MHS-ALM In The United States District Court for the Eastern District of Texas Sherman Division.	Expert reports; deposition.	Retained by Desmarais, LLP (contact: Alan Kellman) representing Oasis Research LLC. I am handling both infringement and validity. This is a patent dispute regarding on line backup and storage. This case settled.
08/2011-06/2014	Apple Inc and Next Software, Inc. v. Motorola, Inc. and Motorola Mobility, Inc. Case No. 10-CV-662 (BBC) In The United States District Court for The Western District of Wisconsin	Expert reports.	Retained by Weil, Gotshal & Manges, LLP (contacts: Kevin Kudlac and Elizabeth Weiswasser) representing Apple, Inc. This was a patent dispute. The case involved technology for the interface of DSPs in cell phones. I handled both infringement as well as validity. This case was dismissed pretrial by Judge Posner.
06/2011-02/2012	Creative Kingdoms, LLC and Medici Portfolio LLC v. Nintendo Co. Ltd. <i>Certain video game systems and Wireless controllers and Components thereof.</i> Investigation No.337-TA-770 In The United States International Trade Commission	Expert report; deposition; testimony at hearing.	Retained by Cooley LLP (contacts: Tim Teter and Matthew Brigham) representing Nintendo Co. Ltd. This was a patent dispute. The case involved technology used in wireless and motion sensing controllers. I handled invalidity. We prevailed at the hearing.
02/2011-11/2011	WiAv Solutions LLC v. Motorola Mobility, Inc, Nokia Corp., Nokia, Inc, Sony Ericsson Mobile Civil Action No: 3:09-cv-447-LO In The United States District Court for The Eastern District of Virginia	Expert report; deposition.	Retained by Finnegan, Henderson, Farabow, Garrett & Dunner, LLP (contacts: Kenie Ho and Christopher Schultz) representing WiAv Solutions LLC. This was a patent dispute. The case involved technology for speech codecs used in GSM cell phones. I handled the infringement side of the case. This case settled.

08/2010-04/2011	Apple Inc. v. Nokia Corporation and High Tech Computer Corp. (HTC). <i>Certain Personal Data and Mobile Communications Devices and Related Software.</i> Investigation No. 337-TA-710 United States International Trade Commission	Expert reports; depositions; testimony at hearing.	Retained by Kirkland & Ellis LLP (contacts: Marc Sernel and Eric Hayes) representing Apple Inc. This was a patent dispute. The case involved technology for the interface of DSPs in cell phones. I handled both infringement as well as validity.
07/2010-11/2010	ACQIS LLC v. Appro International, Inc., Clear Cube Technology, Inc., Dell Inc., Fujitsu Computer Systems Corp., Hitachi America, Ltd., Hewlett-Packard Co., International Business Machines Corp., NEC Corp. of America, NEX Computers, Inc., Sun Microsystems, Inc. and Super Micro Computer, Inc. Case No. 6:06-cv-00148 In the United States District Court for the Eastern District of Texas	Expert report on invalidity and non-infringement.	Retained by Covington & Burling LLP (contact: Chris Martiniak) representing Hewlett Packard. This was a patent matter involving computer blade servers. The case settled.
04/2010-06/2010	Illinois Computer Research LLC v. Harpo Productions, Inc. et al Case Number: 1:2008cv07322 In The United States District Court for The Northern District of Illinois Eastern Division	Expert report; deposition.	Retained by Jackson Walker LLP (contacts: Michael Locklar and Charles Babcock) representing Harpo Productions, Inc. This was a patent dispute. The case involved technology for display of books on a website. This case settled.
02/2010-06/2010	Motorola Inc. v. Research Motion Limited et al <i>Certain wireless communication server system software, wireless handheld devices and battery packs.</i> Investigation No. 337-TA-706 United States International Trade Commission	Expert report.	Retained by Ropes & Gray (contacts: Paul M. Schoenhard and Steven Pepe) representing Motorola, Inc. This was a patent dispute. The case involved technology used in pagers and cell phones as well as their servers. This case settled.
08/2009-10/2010	Balthaser Online, Inc. v. Network Solutions, LLC. Civil Action No. 2:08-cv-430 In The United States District Court Eastern District of Texas Marshall Division	Expert report.	Retained by Dickstein Shaprio, LLP (contacts: Alfred R. Fabricant and Lawrence C. Drucker) representing Balthaser Online, Inc. This was a patent dispute. The case involved technology for the display of rich media applications on a web site. This case settled.
05/2009-05/2010	Nuance Communications Inc. et al v. Tell me Networks Inc. Case Number: 1:2006cv00105 In The United States District Court for The District of Delaware	Expert report.	Retained by McKool Smith (contact: Luke F. McLeroy) representing Nuance Communications. This was a patent dispute. The technology involved techniques for using speech recognition in telephone information systems. This case ended in summary judgment for the defendant.
12/2008-12/2009	TruePosition Inc. v. Andrew Corp, C.A. Case No. 05-0747-SLR (D. Del) U.S. District Court for the District of Delaware	Declaration; expert report.	Retained by Kirkland & Ellis, LLP (contact: Avinash Lele) representing Andrew Corp, C.A. Patent infringement case concerning technology for determining location of a cell phone using information from several cell phone towers. I provided an analysis of a workaround approach.
10/2008-01/2010	RealTime Data LLC. v. Packeteer, Inc. Case No. 6:2008cv00144 U.S. District Court for the Eastern District of Texas	Expert report, depositions, trial prep.	Retained by Ropes & Gray, LLP (contact: Anthony Pastor) representing RealTime Data, LLC. Patent infringement case concerning data compression, storage, and transmission. This case settled on first day of trial.
10/2008-09/2009	Thomson Reuters (Scientific) Inc. v. David A. Von Moll, Comptroller of the Commonwealth of Virginia and George Mason University Civil Action No. CL2008-17114 Circuit Court of Fairfax County Virginia	Expert report.	Retained by Edwards Angell Palmer & Dodge LLP (contacts: Glenn Pudelka and Barry Kramer) representing Thomas Reuters (Scientific) Inc. Contracts dispute centered around allegations of reverse engineering of software. This case ended in summary judgment.

04/2008-12/2008	International Business Machines Corporation v. Asustek Computer, Inc. <i>Certain Computer Products, Computer Components and Products contain Same.</i> Investigation No. 337-TA-628 United States International Trade Commission	Expert reports, declarations, depositions, testimony at hearing.	Retained by Cadwalader Wickersham & Taft LLP (contacts: John Moehringer and Christopher Hughes) representing IBM in this matter. This was an US ITC investigation regarding infringement of a number of IBM patents by computers produced and sold by Asustek. The technology involved computer control of cooling systems for computers. I was involved with infringement as well as validity issues.
10/2007-05/2008	Lucent, Alcatel-Lucent, and Multimedia Patent Trust v. Microsoft Case no. 06-CV- 0684-H (LAB) U.S. District Court for the Southern District of California	Expert reports; depositions; testimony at trial.	Retained by Kirkland & Ellis LLP (representing Lucent Technologies) (contacts: Robert Appleby and John Desmarais) and Baker Botts, LLP (representing Alcatel-Lucent). I advised on infringement as well as validity of U.S. Patents 5,838,319 and 5,977,971. Gave trial testimony regarding invalidity of the '971 patent: jury found the patent was invalid.
03/2000-01/2009	National Music Publishers' Association et al. v. XM Satellite Radio Inc. Civil Action 06-CV-3733(LAK) In The U.S. District Court for the Southern District of New York		Retained by Gibson Dunn & Crutcher, LLP representing National Music Publishers' Association. Copyright dispute concerning the impact of various XM Satellite Radio products. I provided an analysis of source code and functionality of several XM devices.
06/2006-02/2007	Lucent v. Gateway, Microsoft, Dell Case no. 02-CV-2060-B (LAB) Case no. 03-CV-0699-B (LAB) Case no. 03-CV-1108-B (LAB) U.S. District Court for the Southern District of California	Expert reports; depositions; testimony at trial.	Retained by Kirkland & Ellis, LLP representing Lucent Technologies (contacts: Robert Appleby and John Desmarais). I worked on the infringement of Patents 5,341,457 and 5,627,938 as well as validity of these patents. At trial, I testified to regarding infringement of the '457, '938 and '080 patents. This matter concluded with a successful verdict and an award to Lucent of \$1.5 billion.
02/2006	Board of Regents of the University of Texas v. Benq America Corp et al. Civil Action No. A:05CA181 U.S. District Court for the Western District of Texas	Markman Hearing Testimony; Expert reports; deposition; tech tutorial.	Retained by Quinn Emanuel Urquhart Oliver & Hedges LLP (contacts: Evette Pennypacker and Kevin Johnson) representing Benq America et al. Patent infringement. For a Markman (claim construction) hearing, prepared and presented a technology tutorial and testified before a special master. Prepared reports and gave deposition regarding invalidity and inoperability technology in the patent at issue. Claim construction hearing led to summary judgment in Benq America's favor.
2006	Telefonaktiebolaget LM Ericsson et al. v. Samsung Electronics Company Ltd. Investigation No. 337-TA-577 U.S. International Trade Commission	Expert reports and depositions.	Retained by Kirkland & Ellis LLP (contacts: Bao Nguyen, Adam Gill and Michael Pieja) representing Samsung in several patent infringement claims brought by Ericsson. Claims involved technologies for messaging, speech encoding, and speech recording within various GSM cell phones. This case settled just prior to hearing.
07/2005-02/2006	Encyclopedia Britannica Inc. v. Alpine Electronics of America Inc. et al. Civil Action No. 05-359 U.S. District Court for the Western District of Texas	Expert report; deposition.	Retained by Baker Botts LLP (contact: David Wille) representing Encyclopedia Britannica, Inc. Patent infringement. Prepared report on the definiteness of certain claim terms, and was deposed on this matter. This case is ongoing but inactive.

2005-present	<i>Advanced Analytics Inc v. Citigroup Global Markets Inc.</i> Case No. 04 Civil 3531 (LTS) U.S. District Court for the Southern District of New York	Declarations and expert reports; deposition.	Retained by Cleary Gottlieb Steen & Hamilton LLP (contacts: David Williams and Chris Moore) representing Citigroup Global Markets, Inc. Theft of trade secrets. I have been involved in software analysis in this case. The case involved software used to price complex financial instruments. Refuting the claims required software analysis as well as statistical analysis of certain elements of the systems involved. This case pending.
05/2005-09/2005	<i>Atronic International GMBH v. SAI Semi-specialists of America Inc.</i> Case No. 03-CV-4892 (TCP) (MLO) U.S. District Court for the Eastern District of New York	Expert report; deposition.	Retained by Ford Marrin Esposito Witmeyer & Gleser, LLP (contact: Edward M. Pinter) representing Atronic International. Contracts dispute. I have acted primarily to rebut another witness regarding what would have been reasonable behavior for a customer of an electronic parts supplier. This case settled.
02/2005-03/2006	<i>Tivo Inc. v. Echostar Communications Corporation</i> Case No. 2-04cv01 DF U.S. District Court for the Eastern District of Texas	Expert report; deposition; testimony at trial.	Retained by Morrison & Foerster (contact: Karl Kramer) representing Echostar. This case involved digital video recorder (DVR) technology. My work focused on the invalidity of the Tivo patent. I found many pieces of prior art including complete systems that were presented at trial. Tivo prevailed at trial. Most of the claims were subsequently found invalid on re-exam. This case has been the subject of many appeals.
12/2004-05/2006	<i>Foundry Networks Inc. v. Lucent Technologies Inc.</i> Case No. 2:04-CV-40 (TJW) (E.D. Tex.) U.S. District Court for the Eastern District of Texas	Expert reports.	Retained by Kirkland & Ellis LLP (contacts: Jenny Lee and Jeanne Heffernan) representing Lucent Technologies. I advised on infringement as well as validity of U.S. Patent 5,649,131. In addition to generating several reports, I supported the drafting of motions and declarations. This case settled shortly before trial.
07/2004-01/2005	<i>Voice Capture Inc. v. Intel Corporation, Dialogic Corporation, and Nuance Communications, Inc.</i> No. 4:04-cv-40340 U.S. District Court for the Southern District of Iowa	Expert report.	Retained by Gary Cary (contact: Edward Sikorsky) representing Intel Corporation. The case involved Voice Capture's allegation of patent infringement by Intel in the area of interactive voice response systems. In producing an invalidity report on the patent, I analyzed the patent and prior art in great detail. I also provided an expert report on invalidity and an analysis of a rebuttal report. The case settled.
05/2004-03/2005	<i>Dolby Laboratories Inc. v. Lucent Technologies Inc.</i> Case No. C 01-20709 JF (RS) U.S. District Court for the Northern District of California	Expert report.	Retained by Kirkland & Ellis, LLP (contact: Alan Kellman) representing Lucent Technologies. This case involved infringement of a number of Lucent's patents by Dolby's AC3 codec. The case settled.

03/2003	Agere Systems Inc. v. Broadcom Corporation Civil Action No. 03-3138 U.S. District Court for the Eastern District of Pennsylvania	Expert report.	Retained by Kirkland & Ellis LLP (contacts: Bryan Hales and Edward Runyan). The case involved Agere's allegation of patent infringement by Broadcom in the area of speech compression used in various Broadcom telephone products. I analyzed the operation of a speech codec used in digital telephones; worked with counsel and other experts to prepare reports. This case settled.
10/2001	AT&T Corp., v. Microsoft Corporation Civil Action No. 01 CV 4872 (WHP) U.S. District Court for the Southern District of New York	Expert reports; deposition; testimony at trial.	Retained by Cooley Godward Kronish LLP (contacts: Frank Pietrantonio and Stephen Neal) representing AT&T. The case involved AT&T's allegation of patent infringement by Microsoft in the area of speech compression. I analyzed the operation of three speech codecs and worked with counsel and other experts to prepare reports. I was deposed and gave testimony at trial. After the presentation of our case, the matter settled; details of the settlement are confidential. Elements of this case reached the U.S. Supreme Court.
2000	Data System Analysis Inc. v. The Netplex Group Inc., Technology Development Systems Inc. and Xcелlenet Inc. Civil Action No. 97-4652 (JBS-RBK) U.S. District Court for the District of New Jersey	Expert reports; deposition.	Retained by Saul Ewing LLP (contact: Michael Lampert) representing Netplex. Data Systems Analysis (DSA) brought suit against Netplex in a contract matter regarding software claimed by both companies. I was retained to analyze the disputed software and determine a method for computing damages. My expert report found that "functionality" and "effort required to create" were both better metrics than "number of lines of software", the measurement proposed by DSA. I was deposed for several days in this case, provided analysis of other expert reports and assisted in preparing counsel for depositions. This case settled.
01/1998-01/2001	System Management Arts Inc. (SMARTS) v. Avesta Technologies Inc. and David Zager 97 Civil 8101 (RWS) U.S. District Court for the Southern District of New York	Expert reports; deposition.	Initially retained by Kramer Levin Naftalis & Frankel, LLP (contact: Thomas H. Moreland) representing SMARTS. In early 2000 SMARTS retained Proskauer Rose, LLP (contact: Kenneth Rubenstein). The case involved a SMARTS patent in the area of automatic diagnostics of faults in communications networks. I analyzed an Avesta system with similar claimed capabilities and produced an expert report. I also gave deposition and participated extensively in technological analysis and strategic discussions of all aspects of the case. This case settled.
1997	Knowledge Based Technologies Inc. v. International Business Machines Corp. Case No. 96-9461 (JSR) U.S. District Court for the Southern District of New York	Expert reports; deposition.	Retained by Morris, Nichols, Arsht & Tunnell, LLP (contact: Karen Jacobs Loudon) representing Knowledge Based Technologies. Contract dispute regarding the application of fuzzy logic techniques. I generated an expert report that analyzed several forms of fuzzy logic software to determine whether the software was independently developed. I also was deposed in this case. This case settled.