

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Brycer, LLC, Brycer Management, Inc.,
Petitioners

v.

Tegris, Inc.,
Patent Owner

Case No. IPR2023-01196
Patent No. 11,126,966

**DECLARATION OF RICHARD MACINNES, IN SUPPORT OF
PETITION FOR *INTER PARTES*
REVIEW OF U.S. PATENT NO. 11,126,966**

I. INTRODUCTION

1. My name is Richard MacInnes.
2. I make this declaration in support of Petitioners Brycer, LLC and Brycer Management, Inc. (“Petitioners”) petition for *inter partes* review of U.S. Patent No. 11,126,966 (Exhibit 1001), which I refer to in my declaration as “the ’966 Patent.” I have been asked to focus on the following claims of the ’966 Patent: claims 8-16.
3. I am over 21 years of age and otherwise competent to make this declaration.
4. Although I am being compensated for my time at my normal rate in preparing this declaration, the opinions herein are my own, and I have no stake in the outcome of the *inter partes* review proceeding.
5. I am not an employee of Petitioners or any affiliate or subsidiary thereof.
6. This declaration summarizes the opinions I have formed to date. I reserve the right to modify my opinions, if necessary, based on further review and analysis of information that I receive subsequent to the filing of this report, including in response to positions that parties to the *inter partes* review proceeding, or their experts, may take that I have not yet seen.

7. In this declaration, I have occasionally added typographical emphasis to quotations. This is intended to show the relevance of the emphasized portion to my analysis.

II. MY EXPERIENCE AND QUALIFICATIONS

8. My curriculum vitae is provided in Exhibit 1004, and I incorporate it herein.

9. I received a B.S. in general engineering from the United States Naval Academy in 1980. I did my graduate studies in industrial engineering at North Dakota University from 1983 to 1985. In 2004, I received an MBA, Global Management, from the University of Phoenix.

10. I have over 35 years of professional experience in engineering, manufacturing, industrial production, enterprise asset management, maintenance management, and supply chain management practices. From 1996 to the present, I have been the President of Net Results, Inc., where I have led and supported operational improvement initiatives in multiple industries around the world, including the following sectors: oil and gas, chemical, metals, automotive, power generation, public transportation, public utilities, food and beverage, Department of Defense & Aerospace, mining, biotechnology, pulp and paper, enterprise asset management (EAM) and Internet hub technology, and original equipment manufacturing.

11. During the course of my career, I have evaluated, designed, and deployed workflows that integrate varying asset, maintenance and inspection management technologies in public and private sector enterprises, including enterprise resource planning (ERP), enterprise asset management (EAM), computerized maintenance management system (CMMS), geographic information system (GIS), handheld data collection, and web enablement.

12. I have also conducted detailed asset management assessments and value propositions for investment in EAM technology resulting in investment in EAM solutions for multiple organizations during the period 2003 through 2010, as cited in Exhibit 1004.

13. In 2003, I, through Net Results, invented an enterprise asset management architecture, DSC FrameworkX™, that addressed the entirety of the asset life cycle, in terms of better and best practices, for all resource types, e.g., physical assets, people, methods, tools, and information technology. Net Results licensed MRO Software (since acquired by IBM) and Total Resource Management to use its Value Impact Assessment, powered by DSC™ methodology and supporting tools.

14. As an author, I captured both “physical asset” management challenges and solutions available to public and private sector organizations in the book

Strategic MRO, A Roadmap for Transforming Assets into Competitive Advantage, published in 2003, co-authored by Dr. Stephen Pearce.

15. I am qualified to render an opinion regarding asset management and compliance systems for a regulated asset or system of assets, including web-based registries for tracking asset inspection and compliance. Based on my expertise and qualifications, I am qualified to provide an opinion as to what a person of ordinary skill in the art would have understood, known, or concluded as of 2007-2008 (and earlier).

16. As I explain in more detail in Section VI, the '966 Patent generally concerns asset management and compliance for a regulated asset or system of assets, in a computer-implemented environment. I recognize this technology as being well within the sphere of my experience and expertise, and I understand the technology described in the '966 Patent. I believe my experience and education in this industry qualifies me to explain this technology and to address the issues of patent validity from the perspective of a person of ordinary skill in the art. I am qualified to submit expert analyses in this proceeding.

17. I have used my education and experience researching, publishing and working in the field of asset management and compliance systems for a regulated asset or system of assets, and my understanding of the knowledge, creativity, and experience of a person having ordinary skill in the art to which the '966 Patent

relates, in forming the opinions expressed in this declaration, as well as any other materials discussed herein.

III. MATERIALS CONSIDERED

18. In forming my opinions, I read and considered the '966 Patent and its prosecution history, the exhibits listed below (which I understand have been included as part of the petition for *inter partes* review), as well as any other material referenced herein. The exhibits I have considered include:

Exhibit	Description
1001	U.S. Patent No. 11,126,966
1002	File History of U.S. Patent No. 11,126,966
1004	<i>My Curriculum Vitae</i>
1005	U.S. Patent App. Pub. No. 2002/0029222 to <i>Key</i>
1006	U.S. Patent App. Pub. No. 2005/0021449 to <i>Sweeney</i>
1007	U.S. Patent No. 7,649,450 to <i>Campion</i>
1008	U.S. Patent Prov. App. No. 60/849,478 to <i>Campion</i>
1009	U.S. Patent Prov. App. No. 60/886,269
1010	U.S. Patent Prov. App. No. 60/977,870
1011	U.S. Patent Prov. App. No. 60/981,091
1012	U.S. Patent Prov. App. No. 60/981,784
1013	U.S. Patent Prov. App. No. 60/969,905
1014	U.S. Patent Prov. App. No. 60/981,782
1015	U.S. Patent No. 5,680,329 to <i>Lloyd</i>
1016	WO 2004/104891 to <i>Chauhan</i>
1017	U.S. Patent App. Pub. No. 2006/0152349 to <i>Ratnakar</i>
1018	U.S. Patent App. Pub. No. 2006/0197678 to <i>Silvers</i>
1019	U.S. Patent App. Pub. No. 2003/0126002 to <i>Jackson</i>
1020	U.S. Patent App. Pub. No. 2004/0230455 to <i>McKinney</i>
1021	U.S. Patent No. 5,950,150 to <i>Lloyd</i>
1022	<i>Shamsi, U.M., GIS Applications for Water, Wastewater, and Storm Water Systems</i> , CRC Press (2005)
1023	Complaint for Patent Infringement <i>with</i> Exhibits 1-3, Dkt. No. 1, in <i>Tegris, Inc. v. Brycer, LLC</i> , No. 22-cv-5741 (N.D. Ill.)

1024	Buildingreports.com from archive.org (Feb. 2005)
1025	U.S. Patent App. Pub. No. 2004/0267595 to <i>Woodings</i>
1026	<u>GIS Technology and Applications for Fire Service</u> , An ESRI White Paper (March 2006)
1030	Compilation of Motion to Dismiss briefing in <i>Tegris, Inc. v. Brycer, LLC</i> , No. 22-cv-5741 (N.D. Ill.)
1031	U.S. Patent App. Pub. No. 2005/0149544 to <i>Bishop</i>
1032	U.S. Patent App. Pub. No. 2005/0075968 to <i>Apostolides</i>
1033	U.S. Patent App. Pub. No. 2006/0200453 to <i>Santrosyan</i>

19. For any future testimony I may give in this matter, I may use some or all of the documents and information cited to, referred to, and identified in this declaration, as well as any additional materials that are entered into evidence in this matter.

IV. LEGAL PRINCIPLES

A. LEGAL PRINCIPLES OF OBVIOUSNESS

20. I have been informed and I understand that a patent claim is unpatentable and invalid if the subject matter of the claim as a whole would have been obvious to a person of ordinary skill in the art in the field of the patent as of the time of the invention at issue. I have been informed and understand that the following factors must be evaluated to determine whether the claimed subject matter is obvious: (i) the scope and content of the prior art; (ii) the difference or differences, if any, between each claim of the patent and the prior art; (iii) the level of ordinary skill in the art at the time the patent was filed; and (iv) any objective indicia of non-obviousness.

21. I have been informed and I understand that the objective indicia of non-obviousness (or “secondary considerations”) that should be considered include, for example, the following: (i) commercial success; (ii) long-felt but unresolved needs; (iii) copying of the invention by others in the field; (iv) initial expressions of disbelief by experts in the field; (v) failure of others to solve the problem that the inventor solved; and (vi) unexpected results. I have been informed and understand that evidence of these objective indicia must be commensurate in scope with the claimed subject matter. I am not aware of any objective indicia of non-obviousness relevant to the claims of the '966 Patent.

22. I have been informed and I understand that independently made, simultaneous inventions, made within a comparatively short space of time, are evidence that the claimed apparatus was the product only of ordinary mechanical or engineering skill.

23. In determining whether the subject matter as a whole would have been obvious at the time that the invention was made to a person having ordinary skill in the art, I have been informed of and understand certain principles regarding the combination of elements of the prior art. A combination of familiar elements according to known methods is likely to be obvious when it yields predictable results. Also, if a person of ordinary skill in the art can implement a predictable variation in a prior art device, and would see the benefit from doing so, such a

variation would be obvious. In particular, when there is pressure to solve a problem and there are a finite number of identifiable, predictable solutions, it would be reasonable for a person of ordinary skill to pursue those options that fall within his or her technical grasp. If such a process leads to the claimed invention, then the latter is not a patentable invention, but the result of ordinary skill and common sense.

24. I have also been informed and understand that a teaching, suggestion or motivation is a useful guide in establishing a rationale for combining elements of the prior art. The test poses the question as to whether there is an explicit teaching, suggestion, or motivation in the prior art to combine prior art elements in a way that realizes the claimed invention. Though useful to the obviousness inquiry, I understand that this test should not be treated as a rigid rule. It is not necessary to seek out precise teachings; it is permissible to consider the inferences and creative steps that a person of ordinary skill in the art (who is considered to have an ordinary level of creativity and is not an automaton) would employ.

B. LEGAL PRINCIPLES FOR PRIORITY CLAIM

25. I have been informed and understand that, when a U.S. patent claims priority to an earlier filed patent application (such as a provisional application), the claims of the patent are not automatically entitled to the filing date of the earlier filed application.

26. I have been informed and understand that, in order for a claim to be entitled to the benefit of an earlier filed patent application's filing date, the specification of the earlier filed application must contain a written description of the invention and the manner and process of making and using it, in such full, clear, concise, and exact terms to enable an ordinarily skilled artisan to practice the invention claimed in the non-provisional application. I have been informed and understand that the written description requirement is satisfied if the specification of the earlier filed application demonstrates to a person of ordinary skill in the art that the inventor, as of the application's filing date, had possession of the subject matter recited in the claims.

V. LEVEL OF ORDINARY SKILL IN THE ART

27. I have been informed and understand that the disclosure of patents and prior art references are to be viewed from the perspective of a person having ordinary skill in the art at the time of the alleged invention. I use the shorthand "POSITA" (or "POSA") to describe this person. I have provided my opinions from this perspective. I understand that the relevant time period is around January 2008, the filing date of the non-provisional application leading to the '966 Patent. My opinions would not change if an earlier date was used (such as the earliest identified provisional application filed in January 2007 or the provisional applications filed in September or October 2007).

28. I have been informed and understand that prior art references can provide evidence of the level of ordinary skill in the art, and that factors that may be considered in determining this level of skill can include the educational level of the inventors and active workers in the field, the types of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, and the sophistication of the technology.

29. Based on my education and experience, as described above and in my CV, as well as consistent with the '966 Patent and the prior art described below, it is my opinion that those of ordinary skill in the art during the relevant period would have had at least a B.S. in engineering or a related field, and at least two years of experience designing and/or developing asset management and compliance systems for a regulated asset or system of assets. However, I note that this description is approximate, and a higher level of education or skill might make up for less experience, and additional experience could make up for a lower education level.

VI. SUMMARY OF THE '966 PATENT

30. The '966 Patent describes, in its Summary of Invention, that it discloses (a) “[a] method for using a web registry to track the inspection compliance of an owned asset including notifying an owner of an asset that an inspection is needed to comply with a code” and (b) “[a] system for a web based

compliance registry including a database configured to store owned asset information.” Ex. 1001 at 3:8-25. More particularly, the Summary states:

A method for using a web registry to track the inspection compliance of an owned asset including notifying an owner of an asset that an inspection is needed to comply with a code. Electronically transmitting a list of at least one qualified inspector to a user. Receiving a completed inspection uploaded from an inspector. Transmitting the completed inspection to an approving authority. Completing a monetary transaction between the asset owner and the inspector when the inspection is approved by the approving authority.

A system for a web based compliance registry including a database configured to store owned asset information. A user interface in data communication with the database configured to show owned asset information on a display. A handheld device configured to wirelessly connect to the user interface and with the database in order to input and view owned asset data wirelessly and specific information based on its global position.

Ex. 1001 at 3:8-25.

31. The Background of the Invention describes:

There are many assets that are owned around the world that require compliance with a code, local rule, state law, or federal law. Compliance in most of these cases requires a periodic inspection of the owned asset. An example of owned assets requiring annual or regular inspection are fire sprinkler systems, fire alarm systems, kitchen hood systems, fire extinguishers, emergency lighting systems, backflow preventers, bridges, fire hydrants, catch basins, retention ponds, electrical systems, heating/venting/air conditioning systems, plumbing systems, aircraft, vehicles, school transportation vehicles, cranes, powerplants, dams, stormwater runoff, animals, industrial sites, environmental interests, housing, real estate, boilers, farm equipment, viaducts, tunnels, businesses, financials, pharmaceutical caches, weapon caches, amusement parks/rides, elevators, escalators, pilings, piers, safety equipment, kitchens, and others. For purposes of a non limiting example a fire hydrant will be used as an owned asset

throughout the specification, however it should be readily appreciated that any owned asset may be substituted for the fire hydrant.

Ex. 1001 at 1:19-38.

32. As I explain below, including in the various prior art that I discuss, a POSITA would have understood, consistent with the Background in the '966 patent, that (a) there were many regulated assets that were known in the field that required period inspection to ensure compliance and (b) regulated assets were effectively interchangeable in the context of asset management/compliance systems.

33. The '966 Patent generally relies on well-known and conventional computer systems and software. Ex. 1001 at 5:1-6:14, 7:24-64, Figures 1, 2, 3. For example, the '966 Patent states that “[e]mbodiments of the invention are operational with numerous other general-purpose or special purpose computing system environments or configurations.” Ex. 1001 at 5:9-11. According to the patent:

Examples of well-known computing systems, environments, and/or configurations that may be suitable for use with embodiments of the invention include, but are not limited to, personal computers, server computers, hand-held or laptop devices, multiprocessor systems, microprocessor-based systems, set-top boxes, programmable consumer electronics, network PCs, minicomputers, mainframe computers, distributed computing environments that include any of the above systems or devices, and the like.

Ex. 1001 at 5:11-20.

34. As a further example, the '966 Patent also states:

Embodiments of the invention may be described in the general context of computer-executable instructions, such as program modules, being executed by a computer. Generally, program modules include routines, programs, objects, components, data structures, etc. that perform particular tasks or implement particular abstract data types. Embodiments of the invention may also be practiced in distributed-computing environments where tasks are performed by remote processing devices that are linked through a communications network. In a distributed computing environment, program modules may be located in both local and remote computer storage media including memory storage devices.

Ex. 1001 at 5:21-32.

35. In Figure 2 of the '966 Patent, “[a]n embodiment of the present invention takes the form of an exemplary computer network system 200.” Ex. 1001 at 6:21-23. “The system 200 includes an electronic client device 210, such as a personal computer or workstation, that is linked via a communication medium, such as a network 220 (e.g., the Internet), to an electronic device or system, such as a server 230.” Ex. 1001 at 6:23-27. “The server 230 may further be coupled, or otherwise have access, to a database 240 and a computer system 260.” Ex. 1001 at 6:27-29. As was known in the art and consistent with the '966 Patent’s teaching to use well-known computer systems, the '966 Patent notes that “[a]lthough the embodiment illustrated in FIG. 2 includes one server 230 coupled to one client device 210 via the network 220, it should be recognized that embodiments of the invention may be implemented using one or more such client devices coupled to

one or more such servers.” Ex. 1001 at 6:29-33. Figure 2 also discloses that “[t]he server 230 may be coupled to database 240 to retrieve information there from and to store information thereto,” and “[d]atabase 240 may include a plurality of different tables (not shown) that can be used by the server 230 to enable performance of various aspects of embodiments of the invention.” Ex. 1001 at 6:44-49.

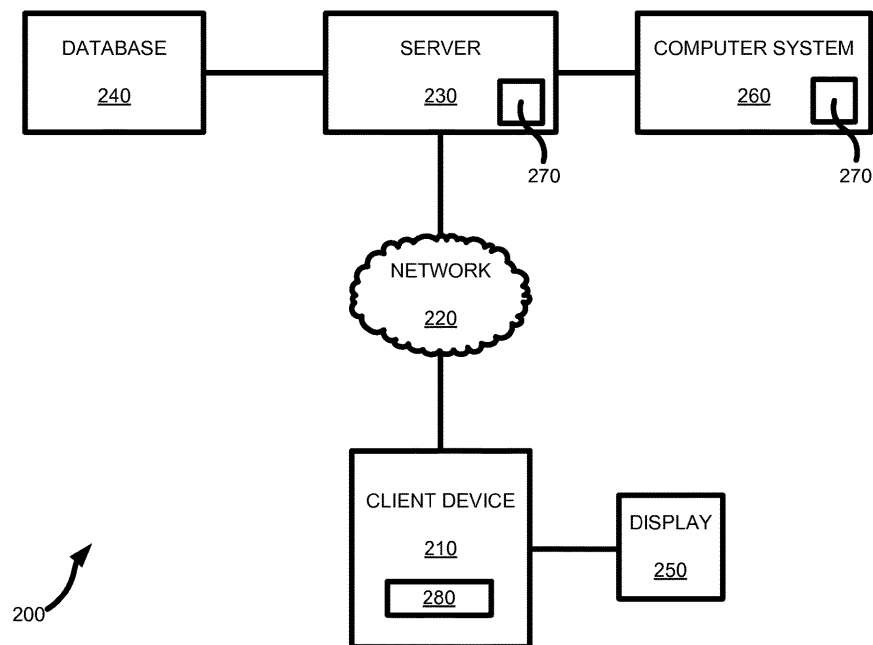


Fig. 2

36. Figure 4A and 4B depict “a database relationship table in one embodiment for a web based registry for inspection compliance” that stores various information such as “hydrant ownership, make, model, year, color, condition, rating of needed maintenance (critical, important, light, or none),

specific recommended maintenance, pressure, flow, GPS location, address, time of inspection, environment conditions during inspection, landscaping, digital picture of hydrant, nozzle size and orientation, physical description of hydrant, special markings, service record, water quality, and hydrant number.” Ex. 1001 at 8:4-14.

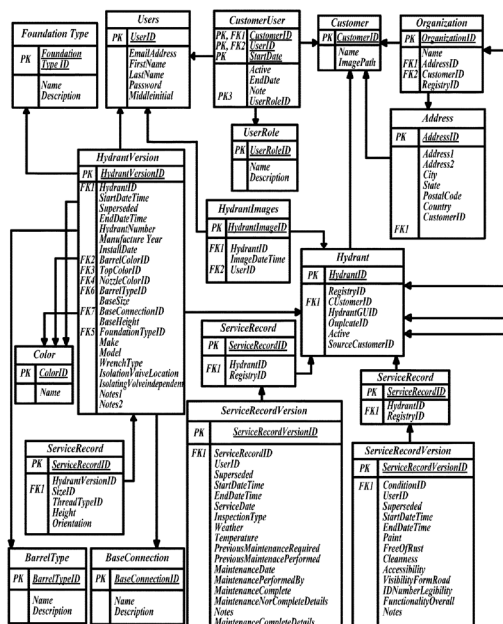


Fig. 4A

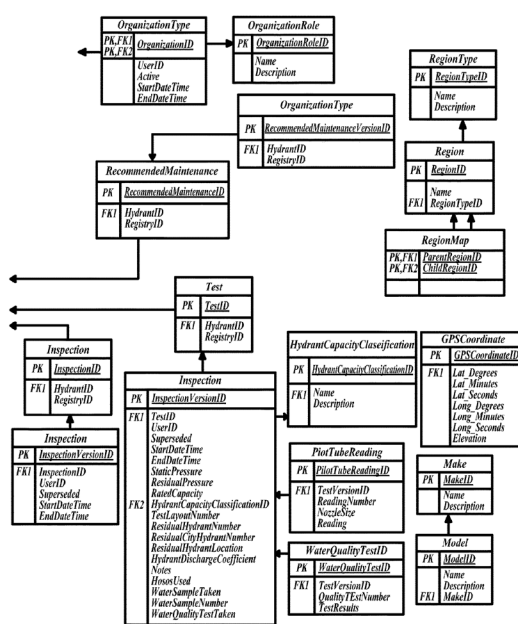


Fig. 4B

37. Figure 5 “shows a method for using a web enabled inspection registry.” Ex. 1001 at 8:15-16.

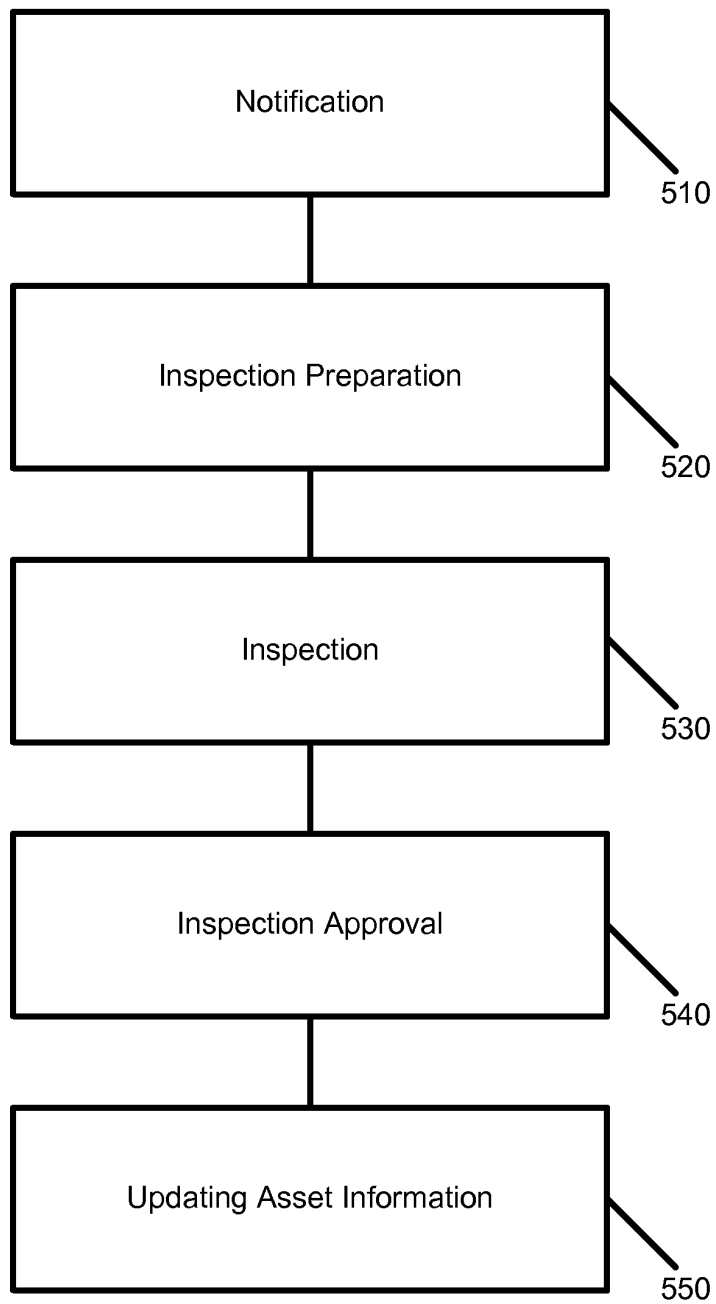


Fig. 5

38. The '966 Patent provides the following description for each step in

Figure 5:

- “At block 510 an owner/inspecting authority is notified that an inspection is needed on an owned asset. The notification is preferably generated based on an annual inspection. However in the case of an initial setup of the registry it also may be the initial request for information from an inspecting authority or it may include a request for further information from a concerned citizen. By way of example, the registry transmits notification to initially register with the registry and to perform an inspection and in the future notifies an owner when a subsequent inspection is necessary. Preferably the owner is sent recommendations on how the property is to be inspected, for example recommendations include names of inspectors, types of inspection needed and general costs associated with the inspection. The notification step is also used to alert the inspecting authority that an inspection is due. The inspecting authority is generally the organization in charge of ensuring compliance of the owned asset. For example a fire marshal is the inspecting authority for fire sprinkler systems. Generally, the inspecting authority receives information relating to all of the owned assets in their area of responsibility that are in need of an inspection.” Ex. 1001 at 8:16-37.
- “At block 520 inspection preparation is done by both an owner of an asset and by an inspector. Once an owner receives notification he/she begins the inspection process by reviewing a list of inspectors and requesting bids for the job. The owner may select their own inspector or may use the web based compliance registry to find a qualified inspector or inspectors. In the registry a list of inspectors is available that includes licensed and bonded inspectors. Once a user has selected inspectors a bidding process is initiated in order to provide users with a list of prices for an inspection. The selection and bidding process is enabled using the web based registry interface. Through the user interface to the web based compliance registry a user is able to review the inspector and his/her credentials, review a bid for the inspection and finally select and schedule an inspection with one of the listed inspectors.” Ex. 1001 at 8:38-53.
- “At block 530 an inspection takes place. The chosen inspector inspects the owned asset based on standard industry inspection rules and regulations. In order to perform the inspection, the inspector either carries with him/her an inspection sheet that includes an area to enter in all information required by

an embodiment of the web based inspection registry or uses a handheld device to perform the inspection. Generally, if an inspector uses the pen and paper means for an inspection the inspector or the asset owner will update the registry manually using the data recorded on site. In another embodiment the inspector uses a web enabled handheld device configured to interface wirelessly with the internet or directly with the registry database. The inspector uses the device to enter in the inspection information and advantageously can print or transmit the inspection to a reviewing authority from the web based compliance registry.” Ex. 1001 at 8:54-9:2.

- “At block 540, the inspection, after being loaded into the registry, goes through a review period. The review is conducted by the approving authority and is done to ensure the inspection is completed in compliance within the rules and regulations of the inspection. This allows the approving authority the ability to quickly review each inspection and provide feedback to the inspector at the earliest convenience. Once the reviewing authority has approved the inspection. The registry sends an invoice to the asset owner in order to arrange for payment. The registry allows for the owner to pay online and then sends payment to the inspector therefore completing the transaction. By way of an example once an inspection is complete previously submitted credit card information is billed for the inspection which preferably includes the inspector's fee, the fees for filing an inspection with the approving authority and registry fees. Deficiencies noted then the authority is able to contact owner and provides coa’s [sic: contact.]” Ex. 1001 at 9:3-20.
- “At block 550, the inspection is complete and the information is updated on the system to reflect a completed and valid inspection. Once updated the information is advantageously viewable by all interested parties.” Ex. 1001 at 9:21-24.

39. The ’966 Patent also a series of “screenshots” for the web registry for compliance, as shown in Figures 7-17, certain of which I have reproduced below.

Ex. 1001 at 9:38-40. The patent does not provide any technical details for these “screenshots,” consistent with the rest of the disclosure to use conventional computers and software. *See generally* Ex. 1001.

40. “FIG. 7 shows a login screen in one embodiment. The user will have preferences and permissions based on whether they are an owner, inspector or an authority.” Ex. 1001 at 9:40-42.

The login screen is titled "Hydrant Works Inspection System" with a small icon of a hydrant. It contains a central form with the following fields: "Email Address", "Password", and "Company Name", each with a corresponding text input box. Below these fields is a checkbox labeled "Stay logged in." and a link labeled "Forgot Password". At the bottom right of the form is a "Login" button.

Fig. 7

41. “FIG. 8 shows a create hydrant screen which allows a user to add information about a hydrant.” Ex. 1001 at 9:42-44.

The "Create Hydrant" screen is titled "HydrantScout" with a small icon of a hydrant. It features a form with the following fields: "Hydrant Number", "Authority OrganizationID" (with a dropdown menu showing "City of Moline"), "Address 1", "Address 2", "City", "State", "Zip Code", "Foundation Type" (with a dropdown menu showing "Concrete"), "Barrel Type" (with a dropdown menu showing "Dry Type"), "Base Connection" (with a dropdown menu showing "Balls"), "Barrel Color" (with a dropdown menu showing "Blue"), "Tag Color" (with a dropdown menu showing "Blue"), "Nozzle Color" (with a dropdown menu showing "Blue"), "Manufacture Year", "Install Date", "Base Size", "Base Height", and "Make". There are "Cancel", "Save & Done", and "Save & New" buttons at the bottom right.

Fig. 8

42. “FIG. 9 shows a hydrant search screen which allows a user to see the results of a typical hydrant search along with identification information about the hydrants. Included in the results screen are pictures of the hydrants if available as

well as other identification information such as address and type.” Ex. 1001 at 9:44-49.

The screenshot shows the HydrantScout application interface. On the left is a search criteria panel with fields for City (Oregon City), State, Zip, Make, and Model. The main area is titled 'Hydrant Search' and contains a table with columns: Action, Image, Hydrant #, Address, Make, Model, Barrel, Top, and Nozzle. The table lists several hydrants, with the first three having orange barrels, tops, and nozzles, and the last two having MH (Main Hose) models. A 'Details' link is provided for each entry. At the bottom, a pagination bar indicates 'Change page: < 1 2 3 4 5 > | Displaying page 1 of 5, terms 1 to 20 of 97.'

Action	Image	Hydrant #	Address	Make	Model	Barrel	Top	Nozzle
Details			606 Main St Oregon City, OR 97045			Orange	Orange	Orange
Details			288 6 th St Oregon City, OR 97045			Orange	Orange	Orange
Details			288 7 th Street Oregon City, OR 97045			Orange	Orange	Orange
Details			606 Main St Oregon City, OR 97045			Orange	Orange	Orange
Details			132 9 th St Oregon City, OR 97045	MH		Orange	Orange	Orange
Details			888 Main St Oregon City, OR 97045	MH		Orange	Orange	Orange
			523 SR-43					

Fig. 9

43. “FIG. 10 shows a hydrant search using a map. On this screen a user uses an interactive map to find a location. Once the location is selected a graphical representation of the hydrants in the area is shown to the user.” Ex. 1001 at 9:49-53.

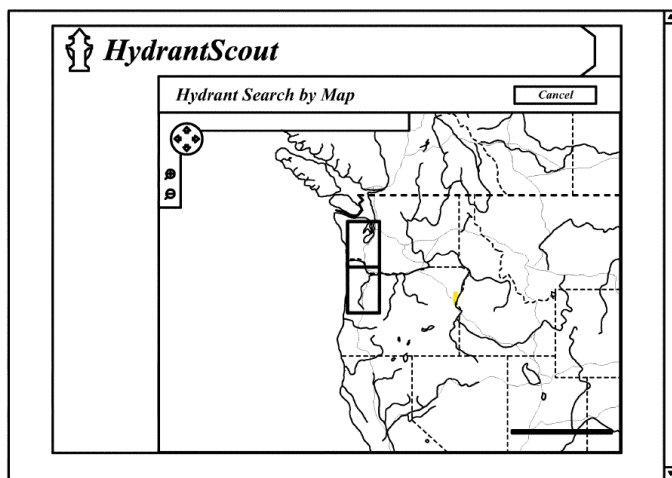


Fig. 10

44. “FIG. 11 shows a view of the hydrant details accessible from the hydrant search page shown in FIGS. 9 and 10.” Ex. 1001 at 9:53-55.

Hydrant Details

Hydrant Number: 344

Address: 2200 - Mauri North Shore

City, State, Zip: Oregon City, OR, 97045

GPS: Lat: 45.334380, Long: -122.540233

Make: [] Model: [] Barrel Color: Blue [x]

Install Date: [] Barrel Type: [] Top Color: Blue [x]

Distance from CI: [] Side Of Road: [] Nozzle Color: Blue [x]

Wrench Type: [] Nozzle Coeff: [] Gate Valve: []

Base Size: [] Base Connection: [x] Nozzles: []

Base Elevation: [] Nozzle Height Size Fitting: []

Special Markings: [] Notes: []

No records to display

Fig. 11

45. “FIG. 12 shows a graphical representation of hydrants in an area on a map as selected by a user.” Ex. 1001 at 9:55-57.

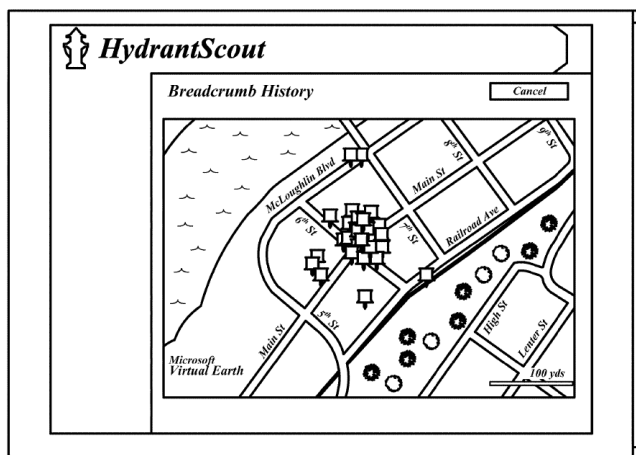


Fig. 12

46. “FIG. 13 shows a screen that allows a user to customize the screen views of the program described in one embodiment.” Ex. 1001 at 9:57-59.

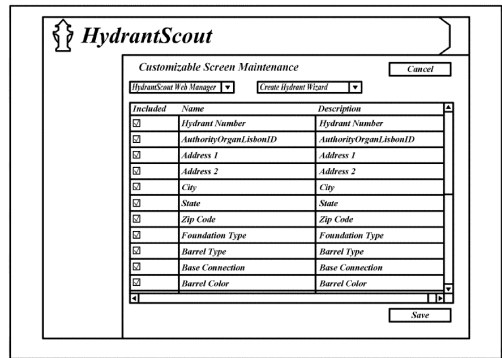


Fig. 13

47. “FIG. 14 shows a user management screen in which an administrator can set users and change permissions of those users.” Ex. 1001 at 9:59-60.

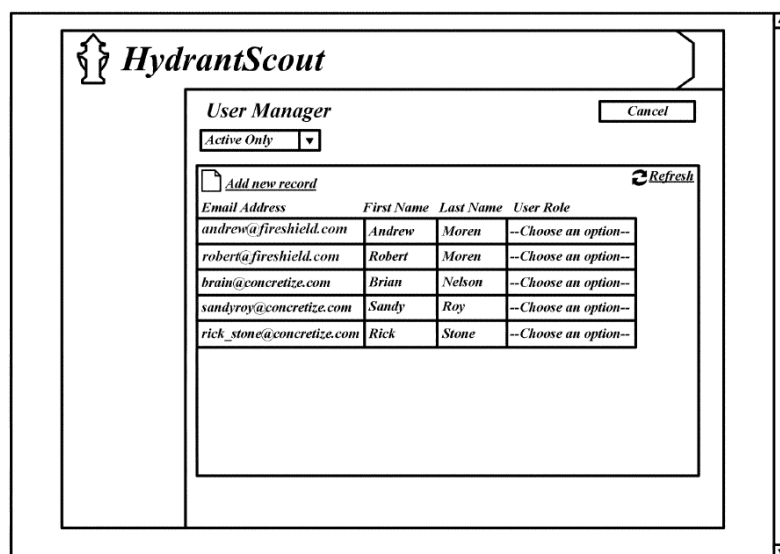


Fig. 14

VII. PROSECUTION HISTORY

48. I have reviewed the prosecution history of the '966 Patent (Exhibit 1002).

49. I note that the claims that issued as claims 8-16 of the '966 patent were added during prosecution of the application leading to the '966 Patent, and

certain of those claims were amended after being added. That is, none of claims 8-16 were part of the application as originally filed in January 2008.

VIII. PRIORITY DATE OF THE CHALLENGED CLAIMS OF THE '966 PATENT

50. The '966 Patent identifies on its cover page six provisional applications:

Related U.S. Application Data

- (60) Provisional application No. 60/886,269, filed on Jan. 23, 2007, provisional application No. 60/977,870, filed on Oct. 5, 2007, provisional application No. 60/981,091, filed on Oct. 18, 2007, provisional application No. 60/981,784, filed on Oct. 22, 2007, provisional application No. 60/969,905, filed on Sep. 4, 2007, provisional application No. 60/981,782, filed on Oct. 22, 2007.

51. In the '966 Patent, it states that the '966 Patent claims priority to four of those applications: "This application claims priority to and incorporates all of the following by reference in their entirety U.S. Patent Provisional Application Nos. 60/886,269 filed on Jan. 23, 2007, 60/977,870 filed on Oct. 5, 2007, 60/981,091 filed Oct. 18, 2007, and 60/981,784 filed on Oct. 22, 2007." Ex. 1001 at 1:7-11. The reference to "this application" refers to the application that issued as the '966 Patent.

52. The '966 Patent also identifies that the remaining two provisionals are incorporated by reference: "This application incorporates all of the following by

reference in their entirety U.S. Patent Provisional Application Nos. 60/969,905 filed on Sep. 4, 2007, and 60/981,782 filed on Oct. 22, 2007.” Ex. 1001 at 1:12-15. The reference to “this application” also refers to the application that issued as the ’966 Patent.

53. I have reviewed and found no support in U.S. Prov. App. No. 60/886,269 (“the ’269 Provisional”; Ex. 1009) for at least the following claim limitations of claim 8 of the ’966 Patent:

Claim Element	Claim Language
8b	retrieving, by a computer-based fire hydrant management software system, real time records of assets from a database, the database being accessible and augmentable by a classes of user;
8c	analyzing the records of assets from the database to identify notification events;
8d	based on the analysis, notifying an owner of an asset of a notification event, wherein the notice includes a standard format description of the type of inspection, and a cost associated with the type of inspection, and wherein the notification event comprises a designatable interval in advance of an impending deadline for the inspection, and wherein the owner of the asset, upon remotely accessing the fire hydrant management software compliance registry, may update and review the status of the assets;
8e	based upon the analysis, sending a standard format notice to the approval authority of the status of the assets assigned to the approval authority, and wherein the approval authority, upon accessing the web-based registry, may update and review the status of the assets assigned;
8f	upon logging on to a password controlled website configured to provide access to the fire hydrant management software, providing to an inspector the owner selects, the selection based upon a list of qualified inspectors that are available to inspect the asset based upon attributes including proximity to the asset, a web-based

Claim Element	Claim Language
	template configured to describe the asset an[d] each of the steps of the inspection;
8g	receiving from the inspector, inspection information in specific response to the web-based template;
8h	storing in a database in association with the asset, the inspection information, wherein the inspection information is accessible to the users, and updating the database in association with the asset based upon the inspection information;
8i	transmitting to the approval authority, a standard format compliance report including noting compliance, wherein the compliance report includes, noting deficiencies in the asset and storing the noted deficiencies in association with the asset.

54. The '269 Provisional (Ex. 1009) is entitled “Global Registry of Fire Hydrants and Closed System Fire Hydrant Water Flow Test.” Ex. 1009 at 19.¹ According to the '269 Provisional, “[t]he general field of the Global Registry of Fire Hydrants is record keeping,” and “[s]pecifically, it is the record keeping of hydrant inspection, testing, and maintenance.” Ex. 1009 at 19. The '269 Provisional identifies that “[o]ther fields classifiable by this invention are fire safety, water quality, financial asset evaluation, infrastructure evaluation, and land survey equipment.” Ex. 1009 at 19.

55. The '269 Provisional provides a high-level description of a “new **product**” and a “new **method**”. Ex. 1009 at 20 (emphasis in original). But as can

¹ My page-number citations to the provisional applications are to the exhibit page number in the lower-right hand corner of each exhibit.

be seen by a review of the provisional, the provisional lacks detail including the majority of what is claimed in claim 8.

56. More particularly, the '269 Provisional describes:

The Global Registry of Fire Hydrants is a new **product** of collected information into a single database specifically for fire hydrants. The database can be bought, sold, and used for other products. For example, an infrastructure-testing program could buy/lease the database to test the reliability of a water system.

The Global Registry of Fire Hydrants is also a new **method** for maintaining records and scheduling inspections, tests, maintenance, and audits of fire hydrants. It also provides new **methods** for communication between fire marshals and maintenance crews, communication between fire departments and the general public or non-profit organizations such as "Adopt-A-Hydrant". It is a tool to evaluate hydrant trends, to grade hydrant manufacturer's products, to assist the planning of new hydrant locations and community development, to assist in land surveying, and to provide record keeping and reporting of water quality.

Ex. 1009 at 20-22 (emphasis in original).

57. The '269 Provisional also provides a high-level description the Global Registry of Fire Hydrants as a "**composition** of a new standard for collecting information" and that the "registry will be used via a website." Ex. 1009 at 21 (emphasis in original). The '269 Provisional also describes various uses for the registry by various entities (fire department, inspection crews, fire hydrant maintenance crews, local and state fire marshals, private fire hydrant owners, insurance companies, city engineers, EPA, budgeting committees, consumers,

inspection/service/repair/etc. companies, financial officers, civil engineers, general public). Ex. 1009 at 21-24.

58. These general descriptions and a review of the '269 Provisional (Ex. 1009 at 19-37) reveal that the provisional provides no support or any description for significant portions of claim 8. Instead the '269 Provisional provides only a high-level description of certain aspects of the registry, as well as various disclosure that has nothing to do with claims 8-16 of the '966 Patent (*e.g.*, closed-system testing and a comparison of "Hydrant Monster" testing, Ex. 1009 at 32-36).

59. I also note that the '269 Provisional includes no figures. A comparison of the specification of the '269 Provisional and the application filed leading to the '966 Patent reveals that '269 Provisional does not disclose significant portions of the '966 Patent specification. This can be seen in the comparison in Exhibit 1029, which compares these two specifications.

60. Because dependent claims 9-16 of the '966 include the limitations of claim 8, I likewise find that the '269 Provisional provides no support for these claims as well.

61. I have also reviewed the other provisionals to which the '966 patent states it claims priority: 60/977,870 ("the '870 Provisional"; Ex. 1010), 60/981,091 ("the '091 Provisional"; Ex. 1011), and 60/981,784 ("the '784 Provisional"; Ex.

1012). I have also found no support in these provisionals for numerous claim limitations as well for claim 8-16 of the '966 Patent.

62. The '870 Provisional provides a high-level overview of “a web based inspection compliance registry and communication tool” and generally notes three user classes (asset owner, authority, and inspector) and how they will use the registry. Ex. 1010 at 6-12. Based on my review, the '870 Provisional fails to disclose at least limitations [8b] and [8d]-[8i].

63. The '091 Provisional is focused on location-based identification of an asset such as using RFID. Ex. 1011 at 3-8. It has a different focus than claims 8-16 of the '966 Patent and, based on my review, I have found no support for any limitation of the claims.

64. The '784 Provisional is a compilation of emails with one of the named inventors (Andrew Moren) and other individuals (Brian Nelson, Byron Whipple), along with, *e.g.*, screen shots of various depicting the Global Registry of Hydrants and a proposed Hydrant Works website. Ex. 1012 at 6-134. Based on my review, I have found that there is no support for at least the same claim limitations as I discussed above regarding the '269 Provisional.

IX. CLAIM CONSTRUCTION

65. I have been informed and understand that the United States Patent and Trademark Office interprets claim terms in an *inter partes* review proceeding

under the same claim construction standard that is used in a United States federal court. I have been informed and understand that under this standard, the meaning of claim terms is considered from the viewpoint of one of ordinary skill in the art at the time of the alleged invention.

66. I have been informed and understand that claim terms are generally given their plain and ordinary meaning as understood by one of ordinary skill in the art in light of the specification and the prosecution history pertaining to the patent. I have been informed and understand, however, that claim terms are generally not limited by the embodiments described in the specification.

67. I have been informed and understand that in addition to the claims, specification, and prosecution history, other evidence may be considered to ascertain the meaning of claim terms, including textbooks, encyclopedias, articles, and dictionaries. I have been informed and understand that this other evidence is often less significant and less reliable than the claims, specification, and prosecution history.

68. In comparing the claims of the '966 Patent to the prior art, I have carefully considered the '966 Patent and its file history based upon my experience and knowledge in the relevant field (discussed in Section II above and in my CV (Ex. 1004)). As relevant to determining the validity of the claims of the '966 Patent in this proceeding, the proper interpretation of the claim terms of the '966 Patent is

consistent with the terms' plain and ordinary meaning, as a POSITA would understand them, as of the time of the invention of the '966 Patent.

X. OVERVIEW OF THE STATE OF THE ART

69. All of claims 8-16, and their various limitations, were known in the prior art.

70. As evidenced by the prior art and state of the art discussed in this Section and below in Section XI, it was well known and commonplace to a POSITA prior to the '966 Patent to provide the claimed features.

71. I have provided in the following sections an overview of certain prior art references relevant to my analysis.

A. U.S. PATENT APPLICATION PUB. NO. 2002/0029222 TO KEY (EX. 1005)

72. U.S. Patent Application Publication No. 2002/0029222 to Key ("Key") was filed on September 7, 2001 and published on March 7, 2002. Ex. 1005 at Cover Page. Because it was published as a U.S. patent application more than one year before the earliest possible filing date of the '966 Patent (namely, the filing of the '269 Provisional), this reference is prior art to claims 8-16 of the '966 Patent.

73. Key is strikingly similar to the invention claimed in the '966 Patent and discloses many of the same features and claimed steps.

74. Key, in its “Technical Field,” identifies that its “invention relates generally to the field of network-based services and, more particularly, to a jurisdiction online management system that manages required inspections mandated by a plurality of different jurisdictions performed by non-governmental entities.” Ex. 1005 at [0002].

75. Key describes certain shortcomings in prior-art inspections, including using “paper forms” and existing “jurisdictional software” that lacks, *e.g.*, common interfaces. Ex. 1005 at [0003]-[0013].

76. According to Key, “a need exists for an efficient, economical process for the transfer of information between jurisdictions and the entities that are mandated to perform required activities.” Ex. 1005 at [0014].

77. Key discloses that its system (a) “provides an efficient, centralized, and web enabled process for the transfer of data between multiple jurisdictions and multiple entities required to routinely interact with the multiple jurisdictions,” (b) “manages required inspections mandated by a plurality of different jurisdictions performed by non-governmental entities,” and (c) “is applicable to pressure vessels, boilers, elevators, amusement park rides, and other required jurisdictional inspections of objects.” Ex. 1005 at [0015].

78. Key provides a “Summary of the Invention,” in which it describes:

The present invention meets the needs described above in a jurisdiction online manager. **The system provides an efficient, centralized, and**

web enabled process for the transfer of data between multiple jurisdictions and multiple entities required to routinely interact with the multiple jurisdictions. The system manages required inspections mandated by a plurality of different jurisdictions performed by non-governmental entities. The system is applicable to pressure vessels, boilers, elevators, amusement park rides, and *other required jurisdictional inspections of objects.*

The system provides a **central staging database** for data. Consequently all insurance company have a common interface and programs to support their mandated inspection functions. Hence, the inspectors have only one user interface with which to cope. In addition, the jurisdictions do not have to agree on the types, domains, or any other information because the system supports multiple jurisdiction forms. Because the jurisdictions do not have to agree on standards or need to invest in expensive development, the system should achieve early adoption by the jurisdictions.

The **centralized system provides a hierarchical data structure** that allows for easy updates and reverse delta storage. Furthermore, the central system enables **real time** availability of current data. Moreover, data validation can be performed as well as enforceable data fields and domains. Additionally, **complete historical information** about the stored objects can be available online.

Generally speaking, **the invention manages required inspections mandated by a plurality of different jurisdictions performed by non-governmental entities.** A central computer system receives object data for an object and most other information via a global computer network, typically the Internet. **The object data is stored in a system database.** Based upon the provided object data, the jurisdiction online manage can determine the controlling jurisdiction for the object. The controlling jurisdiction is the jurisdiction in which the object is located. After determining the controlling jurisdiction, the jurisdiction's inspection form or a similar inspection template can be provided to the inspectors, who will perform the actual physical inspections of the objects. In most cases, non-governmental inspectors perform the inspections. These inspectors generally work for inspection entities, usually insurance companies that perform the mandated inspections in a plurality of different jurisdictions.

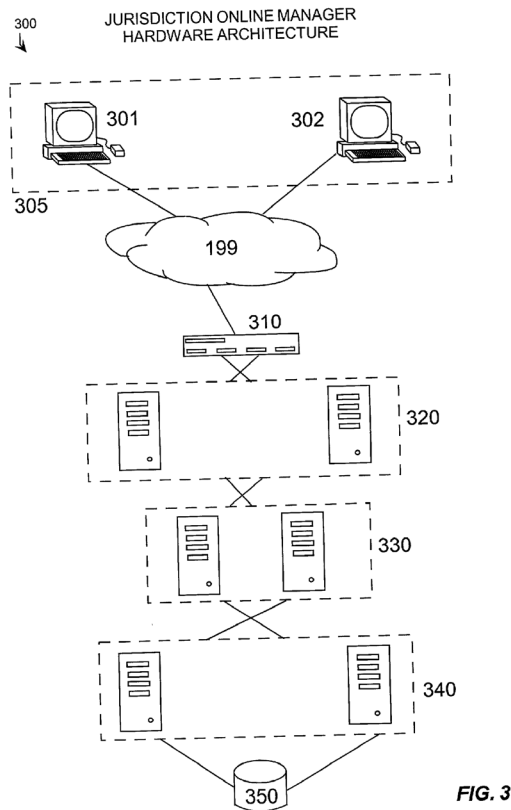
After receiving inspection result data from the inspection, the inspection result data is stored the system database. The inspection result data is then provided to the controlling jurisdiction. The controlling jurisdiction reviews the result data online and any review result data is stored in the system database. The reviewed result data is provided to the inspection entity, which can view the results online.

The system can manage most aspects of the statutorily required inspections. Other aspects of the managed inspection process can include managing inspector commission information. The inspector commission status can be verified prior to accepting inspection results by that inspector. In addition, the system can manage payment information. The system can receive payment information and verify object status prior to providing issuance of an object certificate of compliance. Lack of payment or any current violations can block the issuance of a compliance certificate. Furthermore, the system can perform scheduling functions. The system can automatically determine objects with upcoming inspections due dates and provide this information to the inspection entity. Inspectors at the inspection entity can calendar the inspections as desired.

Ex. 1005 at [0015]-[0020] (emphases added).

79. Key discloses a client-server architecture where relevant information is stored in a database that is very similar to the '966 Patent. Key's Figure 3 is shown below, which is "a hardware architecture of the jurisdiction online manager 110 constructed in accordance with an embodiment of the present invention." Ex. 1005 at [0056]. Like the '966 Patent, Key relies on conventional computers and software: "As will be understood in the art, the system is constructed utilizing Internet-enabled computer systems with computer programs designed to carry out the functions described herein. The computer programs are executed on computer systems constructed as described in reference to FIG. 3.

Although the disclosed embodiments are generally described in reference to Internet-accessible computers, those skilled in the art will recognize that the present invention can be implemented in conjunction with other program units for other types of computers.” Ex. 1005 at [0056].



80. As in Figure 3, above, client computers 305 “run web browsing applications that retrieve and display the [JOM’s] web pages” which are “retrieve[d] ... over a global computer network 199 such as the Internet” by “mak[ing] a request over the Internet 199 to a web server 320,” which are “operative to implement the front-end software” to “display information to users operating a web browser” and “provide notifications in a known manner usually

via email.” Ex. 1005 at [0065]-[0067]. Application servers 330, coupled to web servers 320 and database servers 340, are “operative to implement the application software” which “contains the logic that is used to determine which web pages are presented to the user and how to respond to the user’s actions,” “contains the necessary logic necessary to process the user’s transaction and provide the associated updates and any notifications,” and are described “in greater detail” in Figure 4. Ex. 1005 at [0068]. Database servers 340 are “operative to store and retrieve information from a database 350.” Ex. 1005 at [0069].

81. Key discloses in Figure 4, below, a “software architecture” including a web interface 410 with various interfaces and “provides access for the insurance company inspectors 135, jurisdiction reviewers 125, and owners of the objects via a web browser.” Ex. 1005 at [0070]. Notification system 414 “send[s] communications to users,” *e.g.*, using email. Ex. 1005 at [0071]. Inspection unit 430 “respond[s] to communications, typically via a web browser, for the purpose of accepting or providing inspection information” after a user (*e.g.*, inspector) is authorized. Ex. 1005 at [0074]. Inspection information includes inspection data, including date, status, offending condition, comments, and so forth. Ex. 1005 at [0074]. Accounting unit 435 also responds to communications, and accepts, provides, and displays accounting information such as invoice amounts. Ex. 1005

at [0075]. The various data is stored in database 350 “organized logically in conventional data files in the known manner.” Ex. 1005 at [0104], [0069].

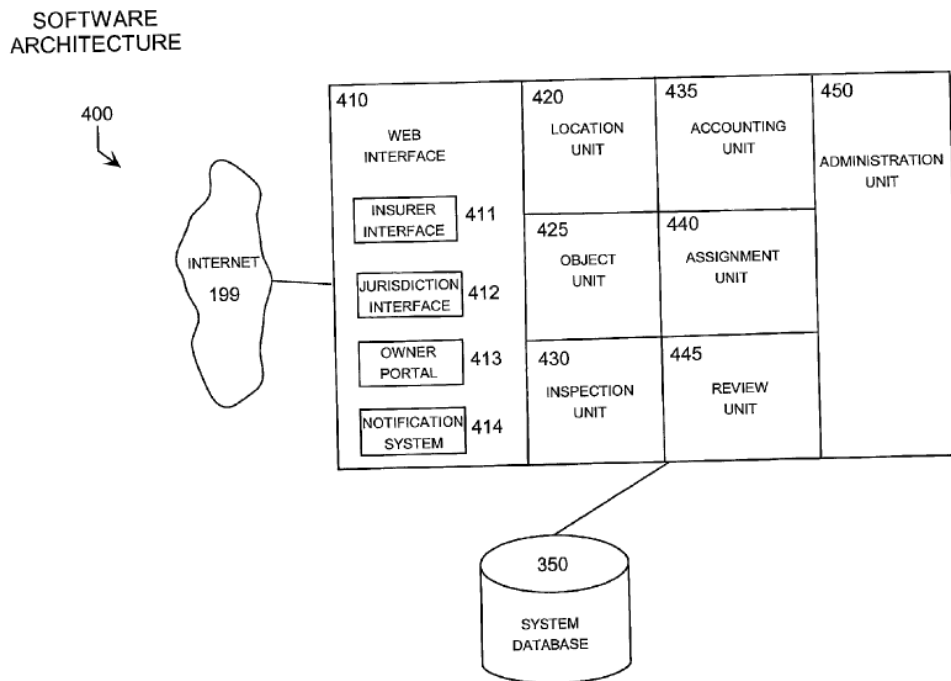
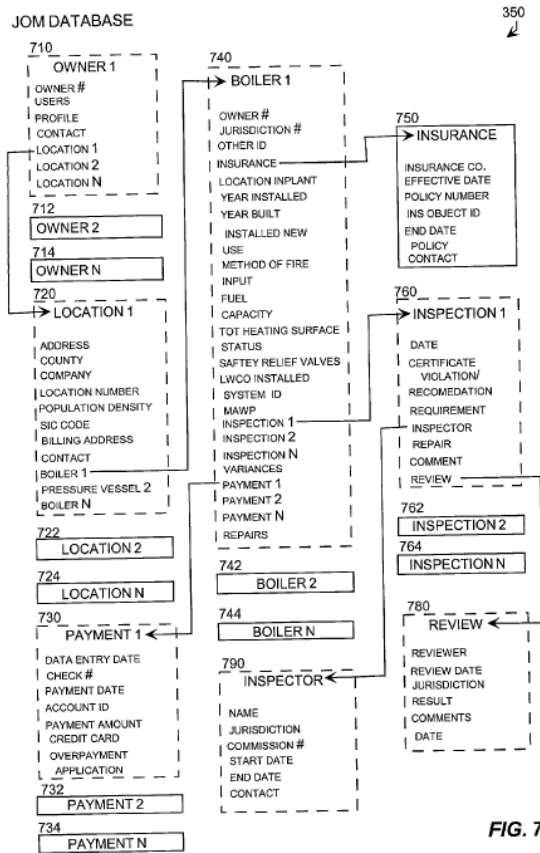


FIG. 4

82. Key’s data stored in database 350 “in the known manner” is depicted in more detail in Figure 7, below, including relevant information regarding the assets, owners, inspections, and jurisdiction review. Ex. 1005 at [0104]-[0114].



B. WO 2004/104891 TO CHAUHAN (EX. 1016)

83. WO 2004/104891 to Chauhan (“Chauhan”) was filed on May 7, 2004 and published on December 2, 2004. Ex. 1016 at Cover Page. Because it was published more than one year before the earliest possible filing date of the ’966 Patent (namely, the filing of the ’269 Provisional), this reference is prior art to claims 8-16 of the ’966 Patent.

84. Chauhan describes its field of invention:

The invention generally relates to an automated management system for managing data, outage repair, load switching, job workflow and crew dispatching, crew workflow, installation, maintenance and restoration of utility services by integrating geographic information

systems (GIS) data with many other data sources so as to gather, transform, manipulate, analyze, and produce desired information for continuously supplying utility and relevant services. The data sources include customer information systems (CIS) and billing data, interactive voice recognition (IVR) call management data, supervisory control and data acquisition (SCADA), mobile crew management (MCM) data, automatic meter reading (AMR) data, automated vehicle location (AVL) data, engineering analysis data supported by 3rd party software packages (such as load monitoring and balancing), etc. In particular, the system allows an on-site engineer to retrieve data (ex. field maps, work orders, codes) or enter, via a portable device, inspection data (ex. such as poles or underground facilities, code violations).

Ex. 1016 at [0001].

85. Chauhan discloses that its “UtilityCenter™ 10 is an integrated GIS suite of applications that manages information across the entire utility” and that “the primary data for the UtilityCenter™ 10 is stored in a Microsoft SQL Server® database 800.” Ex. 1016 at [0039]-[0042]. Chauhan disclose a variety of utility “themes” including “CONDUCT, WATERPIPE, GASVALVE, etc.” as well as “HYDRANT”. Ex. 1016 at [0042], [0217]. Chauhan further discloses performing “fire hydrant inspections ... with UtilityCenter” and a “HYDRANT Theme” that allows an inspector “edit and view inspection fields.” Ex. 1016 at [0207].

86. Figure 1 of Chauhan is below:

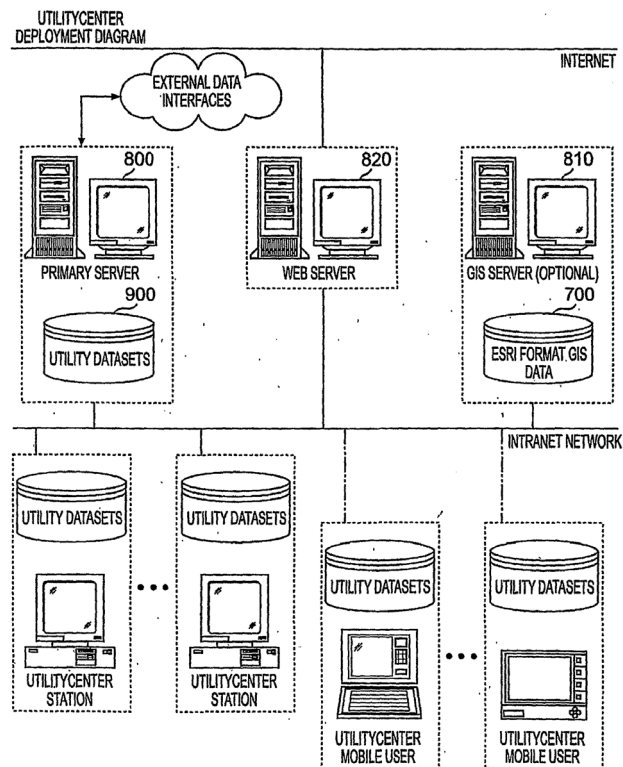


FIG. 1

C. U.S. PATENT APPLICATION PUB. NO. 2005/0021449 TO SWEENEY (EX. 1006)

87. U.S. Patent App. Pub. No. 2005/0021449 to Sweeney (“Sweeney”) was filed on July 22, 2004 and published on January 27, 2005. Ex. 1006 at Cover Page. Because it was published as a U.S. patent application more than one year before the earliest possible filing date of the ’966 Patent (namely, the filing of the ’269 Provisional), this reference is prior art to claims 8-16 of the ’966 Patent.

88. Sweeney describes, in its Abstract:

The present invention provides methods and systems for online management of construction assets. An online inspection report relating

to a current condition of a construction asset is provided. The inspection report is archived (e.g., uploaded to a database accessible via a server). An asset owner is then provided with online access to the archived inspection report. The inspection report may include a description of the construction asset, recommendations regarding maintenance of the construction asset, recommendations regarding current repairs to the construction asset, photographs of the construction asset, video clips of the construction asset, design drawings of the construction asset, design specifications of the construction asset, repair history, defect history, maintenance history, and the like. A plurality of inspection reports corresponding to a plurality of construction assets of the asset owner may be archived. Computerized reports may be generated relating to one or more of the plurality of construction assets.

Ex. 1006 at Abstract.

89. Sweeney further discloses “methods and systems for the online management of a construction asset.” Ex. 1006 at [0002], [0007]. Sweeney also discloses that an “asset owner/owner manager may log in to a secure section of a website to reach a web page containing the asset owner’s information” and may, for example, view “inspection reports.” Ex. 1006 at [0040]-[0041]. A report may be generated that “may relate to one or more of the plurality of the construction assets and be generated according to at least one of age of the construction asset, a rated condition of the construction asset, a type of the construction asset, recommended repairs listed on the inspection report 12, date of construction, date of last repair, expected remaining lifetime of the construction asset, contractors responsible for construction of or repairs to the construction asset, a location of the

construction asset, repair history, repair type, repair costs, defect history, and the like.” Ex. 1006 at [0042].

90. Similar to Key, Chauhan and several of the other prior art references I discuss, Sweeney relies on a conventional database (database 10) to store information about the inspection report, bid information, etc., as depicted in Figure 2, below. Ex. 1006 at [0032]-[0034].

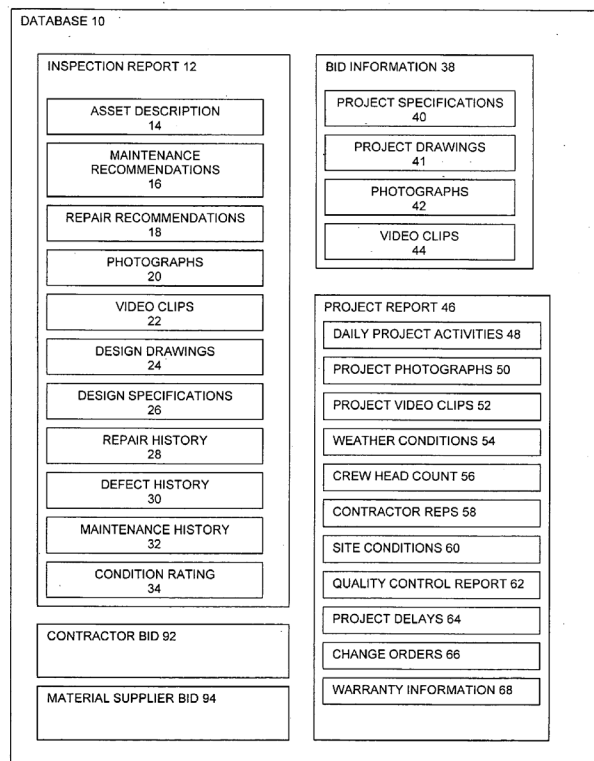


FIG. 2

D. U.S. PATENT APPLICATION PUB. NO. 2004/0230455 TO MCKINNEY (EX. 1020)

91. U.S. Patent App. Pub. No. 2004/0230455 to McKinney (“McKinney”) was filed on June 18, 2004 and published on November 18, 2004. Ex. 1020 at

Cover Page. Because it was published as a U.S. patent application more than one year before the earliest possible filing date of the '966 Patent (namely, the filing of the '269 Provisional), this reference is prior art to claims 8-16 of the '966 Patent.

92. McKinney discloses that it “relates generally to monitoring systems and, in a presently preferred embodiment, provides a system and method for servicing and for verifying compliance related to maintenance, operation, inspection, repair, and/or service contract renewal status of environmental equipment such as wastewater treatment systems.” Ex. 1020 at [0003].

93. McKinney discloses that its system “may provide an electronic regulatory compliance method for one or a plurality of environmental equipment systems” that may have “a plurality of different owners,” where the assets must comply with certain regulations. Ex. 1020 at [0032], [0044]-[0045]. McKinney further discloses a web-based system operating over the Internet, and “form letters” provided to, *e.g.*, the owner, scheduling of inspections, and monitoring by the regulatory agency. Ex. 1020 at [0023], [0029], [0050]-[0053], [0057]-[0059].

E. U.S. PATENT NO. 7,649,450 TO CAMPION (EX. 1007)

94. U.S. Patent No. 7,649,450 to Campion (“Campion”) was filed January 30, 2007, issued January 19, 2010, and identifies as a related application, U.S. Prov. App. No. 60/849,478, filed October 5, 2006. Ex. 1007 at Cover Page; Ex. 1008 (Provisional). As I explained above in Section VIII, it is my opinion that

none of claims 8-16 are entitled to the filing date of the '269 Provisional. As such, because *Campion* was filed before the filing of the '966 Patent and ultimately issued into a U.S. patent, this reference is prior art to claims 8-16 of the '966 Patent. However, my opinion concerning the obviousness of claims 8-16 would not change, even if *Campion* was not considered.

95. *Campion* “relates generally to authenticated testing of life-safety equipment such as smoke detector, fire alarm, and sprinkler systems and more particularly, to providing an authenticated test report and other authenticated test related and monitoring related metrics for a life-safety equipment, such as a fire alarm control panel for facilitating on-site walkabout testing, inspection, installation, servicing, and control of fire alarm systems.” Ex. 1007 at 1:18-25.

96. *Campion* describes the known existence of, and known importance of complying with, jurisdictional codes and ordinances such as the New Jersey State Fire Prevention Code derived from the Uniform Fire Code published by the National Fire Protection Association (“NFPA”). Ex. 1007 at 1:27-2:33. Per *Campion*, “[u]nder the codes, life safety equipment is mandated to be serviced, tested, and inspected at regular intervals as dictated by applicable codes and standards in a given jurisdiction.” Ex. 1007 at 1:38-40. *Campion* further discloses that “[i]t would be desirable in the art to alleviate the need for excessive manual panel interaction, to provide means for authentication of results, and to provide an

authenticated report or the like in a compliant format for the jurisdiction where the facility is located.” Ex. 1007 at 2:11-15. Campion also discloses other “desirable” improvements in the art: (a) “It would be further desirable in the art to significantly decrease the amount of labor required for testing, inspecting and servicing of life safety systems; to provide constant monitoring of life safety equipment during testing, inspection, and service of life safety systems”; (b) “It would also be desirable to provide persons not familiar with inspection and testing of equipment with the ability to monitor testing of systems for observing and accepting such tests; to allow persons interacting with system events the ability to monitor changes in status while investigating events in areas away from the control components; to allow persons interacting with system events the ability to monitor additional events while away from control components”; and (c) “It would be still further desirable to decrease the time required to respond and investigate additional events in the facility by the instantaneous transmission of the event to the person on site; to allow persons not familiar with specific makes and models of control equipment to view events while away from the control panel, and the like.” Ex. 1007 at 2:16-34.

97. In Figure 5, below, Campion discloses a conventional client-server system which includes web server 530 to retrieve and store data and display specific questions during an inspection, data server 520 for data storage, and

multiple devices 532-535 such as workstations, laptops, etc. Ex. 1007 at 6:57-7:28.

“Workstations can also be used to schedule inspections due over the course of coming time for periods as required, to set dates for required inspection and receive reminders of inspections due and the like.” Ex. 1007 at 9:37-41.

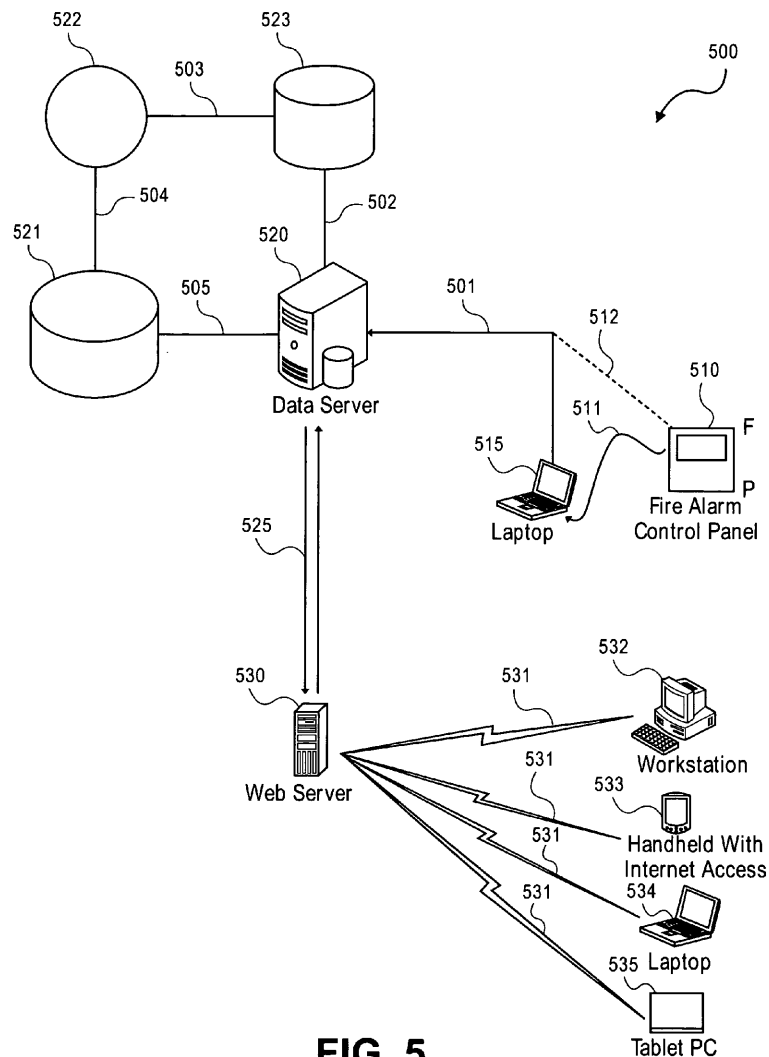


FIG. 5

F. U.S. PATENT NO. 5,950,150 TO LLOYD (EX. 1021)

98. U.S. Patent No. 5,950,150 to Lloyd (“Lloyd’150”) issued on September 7, 1999. Ex. 1021 at Cover Page. Because it issued as a U.S. patent more than one year before the earliest possible filing date of the ’966 Patent (namely, the filing of the ’269 Provisional), this reference is prior art to claims 8-16 of the ’966 Patent.

99. Lloyd’150 discloses a “system and method for operational criteria compliance verification of fire/life safety systems and components whose operation, maintenance and testing are established by predetermined operational criteria, such as industry standards and fire/life safety codes” including providing “reports ... to the owner, insurer, or management company at any time” such as “on a scheduled basis” of system/components conditions, testing and needed maintenance. Ex. 1021 at Abstract, 21:23-22:13.

100. Lloyd’150 identifies certain “needs,” for example:

The fire/life safety system of a building/structure must be designed and installed in such a way as to ensure that its operation after installation will be in accordance with fire/life safety codes and industry standards. Once installed, however, the fire/life safety system must also be maintained and tested in accordance with these same codes and standards to ensure that its operating performance remains unimpaired; that is, it must remain code compliant and kept in a state of operational readiness, which ensures its effectiveness. Thus, there is a need for such a system to verify compliance of the entire fire/life safety system, particularly with respect to operational criteria such as fire/life safety codes and associated industry standards.

* * * *

Thus, there is a need for a system and method capable of notifying insurers, property management companies, building/structure owners or other interested entities of any discrepancies or deviations in the preparedness of fire/life safety systems. Such a system and method will bring about more strict code compliance, through improved testing and maintenance practices, so that reliability of fire/life safety systems will be greatly increased.

There is also a need for such a system and method that can ascertain the functionality of a fire/life safety system, and on a real-time basis notify interested parties of problem conditions as they occur. Further, there is a need for such a system and method that can collect and utilize such information through statistical analysis over long time periods, which can provide historical maintenance and troubleshooting information, and which will help to reduce failures of water-based fire protection systems and increase component reliability and service life.

Ex. 1021 at 1:53-65, 7:24-42.

101. Lloyd'150 also discloses various known fire/life safety systems and components requiring compliance verification such as fire pump systems, sprinkler systems, fire pressure maintenance systems, fire detection/alarm systems, smoke evacuation systems, heating and ventilation shutdown systems, elevator recall systems, fire door open/close systems, and crossover to emergency (back-up) power systems. Ex. 1021 at 1:9-2:58, 5:56-6:26, 7:24-42.

102. For "storing the data and operational criteria compliance verification reports," it relies on "commercially available databases and/or spreadsheets such as DBase, Access, Paradox, Lotus 123, Quattro Pro, Excel or other suitable programs." Ex. 1021 at 12:35-54.

**XI. ANALYSIS OF THE PATENTABILITY OF '966 PATENT CLAIMS:
THE COMBINATION OF KEY, CHAUHAN, SWEENEY, AND
MCKINNEY RENDER OBVIOUS CLAIMS 8-16 OF THE '966
PATENT**

103. In my opinion, the combination of Key, Chauhan, Sweeney, and McKinney disclose and render obvious the claimed steps in claims 8-16 of the '966 Patent.

104. As I explain in my declaration, Key discloses the majority of the aspects of the claimed steps, and complementary references Chauhan, Sweeney, and McKinney add certain obvious and trivial details (such as applying Key's teachings to use its system with various assets requiring regulatory-mandated-compliance to fire hydrants and particular information provided with notices to the relevant stakeholders disclosed in Key, including asset owners, qualified inspectors, and jurisdictional approval authorities).

105. I first provide an overview of why a POSITA would have been motivated to and had a reasonable expectation of success—in fact, a high likelihood of success—in adding certain known and conventional details to Key's centralized "jurisdiction online manager." I then provide a step-by-step comparison of the combination and the claimed steps, and as part of that comparison, I discuss additional reasons when I explain why the combination would have been obvious to a POSITA.

A. OVERVIEW EXPLANATION OF WHY A POSITA WOULD HAVE THOUGHT TO COMBINE THE REFERENCES

106. As I discuss below in Section XI.A.1, a POSITA would have considered each of Key, Chauhan, Sweeney, and McKinney to be complementary references in the same field and looked to each other when considering the state of the art at the time of the '966 Patent.

107. As evidenced by my discussion above in Section X (Overview of the State of the Art), in this Section XI.A (Overview Explanation of Why a POSITA Would Have Thought to Combine the References), and in Section XI.B (my explanation of the specific prior art's teachings as applied to claims 8-14), the prior art teaches the claimed configurations, and a POSITA would have found obvious the claims. For example, as I explain in my declaration and evidenced by Key, Chauhan, Sweeney, McKinney and the other prior art I discuss, it was well known in the art and obvious to a POSITA:

- to provide a web-based asset management system and method for monitoring and inspecting for compliance various assets (such as fire hydrants, boilers, pressure vessels, elevators, sprinkler systems, amusement parks, fire pumps, construction assets, utilities and the like);
- that the system and method provides controlled access for viewing and data entry/manipulation (*e.g.*, via a username and password), including updating status, to various user classes (including asset owners, asset inspectors and jurisdictional/authority reviewers/approvers);
- that the data for each asset is stored in a central database and accessible in real time;

- that the system and method provides relevant standard notices and reports to the various users including, *e.g.*, notifying the owner of upcoming inspections and deadlines and the approval authority of inspection status and compliance or violations;
- that the owner can select particular qualified/certified inspectors within the particular jurisdiction in which the asset resides;
- that the system and method provides inspection templates to guide the inspector through the asset-inspection process resulting in an inspection report provided to the jurisdictional/authority reviewers/approvers for review including with any code violations; and
- that the system and method should provide compliance reporting and management throughout the entire life cycle to all relevant stakeholders such that the stakeholders can keep apprised of necessary events and status and take any needed actions as a result.

108. I provide in the following two sub-sections (Sections XI.A.1 and XI.A.2) an explanation: (1) that a POSITA would have found the references to be in the same field, that they are complementary, and readily combinable relying on, for example, well-known and conventional software, databases, and computers; and (2) that a POSITA would have found it obvious and routine to use Key's jurisdiction online manager for fire hydrant inspection compliance. I provide in Section XI.B further explanations why a POSITA would have found it obvious and routine to incorporate certain other features/information into Key's jurisdiction online manager (such as particular information contained in Key's notices).

1. The References are in the Same Field, are Complementary, and Rely on Well-Known and Conventional Computers, Software, and Databases

109. Each reference is in the same field of art: web-based asset management, monitoring, and compliance for a regulated asset or system of assets (including, *e.g.*, inspection, repairs, scheduling, and notices). Further confirming that they are applicable to each other and that various features and details could readily be combined, the references teach to implement their respective system and method using well-known and conventional computers, software and databases in a typical client-server distributed architecture. I note that this is just like the teachings of the '966 Patent, as I explained above in Section VI (my overview of the '966 Patent), which further confirms to a POSITA that there would be no technical or engineering difficulty in adding certain features or functionality to Key's conventional system architecture, and that it would be expected to work (*e.g.*, adding certain details to Key's notices or storing certain information in Key's database, as I discuss further in Section XI.B).

110. Key discloses, for example, a "jurisdiction online manager" system that (a) "provides an efficient, centralized, and web enabled process for the transfer of data between multiple jurisdictions and multiple entities required to routinely interact with the multiple jurisdictions," (b) "manages required inspections mandated by a plurality of different jurisdictions performed by non-governmental

entities,” and (c) “is applicable to pressure vessels, boilers, elevators, amusement park rides, and other required jurisdictional inspections of objects.” Ex. 1005 at [0015]. Key further discloses its “central”/“centralized” system “provides a central staging database for data,” “provides a hierarchical data structure that allows for easy updates and reverse delta storage,” and “enables real time availability of current data.” Ex. 1005 at [0016]-[0017]. Key also discloses “complete historical information about the stored objects can be available online.” Ex. 1005 at [0017].

111. Key relies on a conventional client-server architecture where data is stored in a centralized database and “organized logically in conventional data files in the known manner...” *See* Section X.A above discussing Key including Figures 3, 4, and 7.

112. Chauhan “generally relates to an automated management system for managing data, outage repair, load switching, job workflow and crew dispatching, crew workflow, installation, maintenance and restoration of utility services by integrating geographic information systems (GIS) data with many other data sources so as to gather, transform, manipulate, analyze, and produce desired information for continuously supplying utility and relevant services.” Ex. 1016 at [0001]. Chauhan discloses that “the system allows an on-site engineer to retrieve data (ex. Field maps, work orders, codes) or enter, via a portable device, inspection data (ex. Such as poles or underground facilities, code violations).” Ex. 1016 at

[0001]. That is, inspection data is entered for purposes such as noting “code violations.”

113. As I discussed above in Section X.B, Chauhan discloses a “UtilityCenter” that “is an integrated GIS suite of applications that manages information across the entire utility” and that “the primary data” for the UtilityCenter is “stored in a Microsoft SQL Server® database.” Ex. 1016 at [0039]-[0042]. As Chauhan notes, such a SQL language and database were conventional and known in the art: “The Structured Query Language (SQL) is a standardized query language for requesting information from a database, it has been the favorite query language for database management systems running on minicomputers and mainframes because it supports distributed databases (databases that are spread out over several computer systems).” Ex. 1016 at [0039]. Moreover, as discussed above in Section X.B, like Key and the ’966 Patent, Chauhan discloses a conventional client-server architecture where data is stored in the SQL database.

114. Chauhan discloses specifically that its UtilityCenter is intended to be used for “fire hydrant inspections” (among many other utility inspections): “a contractor hired to do fire hydrant inspections could be given a laptop with UtilityCenter loaded on it and assigned a username that only allows him to edit and view the inspection fields on the HYDRANT theme.” Ex. 1016 at [0207]. I note

that Chauhan discloses that its utility center is applicable to many different utilities (beyond just fire hydrants) and that the “same technology” that it disclosed “has been tailored to the specific needs of public agencies”:

Besides electric transmission and distribution utilities, **the same technology has been tailored to the specific needs of public agencies**, such as fire and police departments, zoning and planning commissions, public transportation departments and others can benefit from instant access to accurate mapping information, such as gas pipeline and distribution utilities, water distribution utilities & wastewater utilities, broadband telecom providers, real property tax assessment, municipal zoning and planning, Department of Defense military applications, EMA emergency management applications, Department of Energy utility applications, and other local, state and federal governmental agencies. Specific software application suites, such as CityCenter™ (Emergency 9-1-1, fire & police, zoning/planning, public work), CountyCenter™ (EMA, highway dept, EPA), and GlobalCenter™ (homeland security, housing, energy, interior), have been developed accordingly.

Ex. 1016 at [0218] (emphasis added).

115. As is apparent to a POSITA and consist with the teachings in Chauhan, the “same technology” is intended to be “tailored to the specific needs of public agencies,” and, in fact, had been done so. The “specific needs” vary to some degree depending on the agency (such as the disclosed fire, police, zoning, transportation) and as shown by the various literature I discuss, a POSITA implementing Key’s system for a particular asset would have logically designed the system to account for such “specific needs” of the agency and asset.

116. Similar to the other references, Sweeney discloses an online system and method for managing assets (in Sweeney's example, construction assets):

[T]he present application provides methods and systems for the online condition management of a construction asset. The present invention enables online monitoring of the condition of construction asset, such as a building, a roof, a parking lot, or the like. The invention also provides an Internet based design and bid procurement process that is linked to the condition management system to enable online bidding on a construction project. The present invention is applicable to a wide variety of construction projects and assets.

Ex. 1006 at [0002].

117. Also similar to the other references, Sweeney discloses to store data in a database accessible via a server where the information in the database is accessed online:

In an example embodiment the present invention, a computerized method for the online management of a construction asset is provided. In accordance with the example embodiment, an online inspection report relating to a current condition of a construction asset is provided. The inspection report is archived (e.g., uploaded to a database accessible via a server). An asset owner is then provided with online access to the archived inspection report.

Ex. 1006 at [0007].

118. Sweeney likewise discloses:

Such a system may be used to implement the methods of the invention discussed above. For example, the database may also be used to store the online bid information and the project reports. The server may comprise an application server which stores software for carrying out the methods for managing the construction asset discussed above. In addition, the server may store software for carrying out the design and bid methods discussed above. The server may also include a report

generator function for generating reports in response to user queries from the web browser, which may run on a conventional personal computer.

Ex. 1006 at [0022].

119. McKinney “relates generally to monitoring systems and, in a presently preferred embodiment, provides a system and method for servicing and for verifying compliance related to maintenance, operation, inspection, repair, and/or service contract renewal status of environmental equipment such as wastewater treatment systems.” Ex. 1020 at [0003].

120. Like the other references, McKinney relies on known servers, databases, etc. to provide, for example, web-based access to the database to a regulatory agency to make various information available, including maintenance and inspection information. Ex. 1020 at [0023], [0029], [0050]-[0053], [0057]-[0059], [0077]-[0078], [0127]; *see also* Section X.D.

121. In sum, the references are in the same field, are complementary and readily combinable (*e.g.*, adding certain information to Key’s database or notices).

2. A POSITA Would Have Found it Obvious to Use Key’s Jurisdiction Online Manager to Manage Fire Hydrants

122. As I discussed above in Section X.A and further below, Key discloses a “jurisdiction online manager” that “provides an efficient, centralized, and web enabled process for the transfer of data between multiple jurisdictions and multiple entities required to routinely interact with the multiple jurisdictions” and enables

interaction among asset owners, inspectors, and authorized authorities to ensure asset compliance (inspections, scheduling, review, repairs, etc.).

123. As I discuss in this Section XI.A and further below in connection with the particular claims and limitations, Chauhan, Sweeney and McKinney each add basic, trivial functionality/details that a POSITA when applied to the system of Key (for example, particular notices and formats and inclusion of particular information in such notices) that would readily and easily apply to Key's system (such as storing relevant information in Key's database and providing such information as part of a form notice).

124. Key further discloses its system various owned assets/objects: "The system is applicable to pressure vessels, boilers, elevators, amusement park rides, and **other required jurisdictional inspections of objects.**" Ex. 1005 at [0015] (emphasis added), [0075], [0104]-[0105]. That is, Key teaches—as was well-known in the art as I discuss below—that its jurisdiction online manager was readily applicable to a myriad of assets, including the specific examples along with other objects that had "required jurisdictional inspections."

125. I further note that Key discloses that certain objects (such as the pressure vessel and boiler examples) "can be dangerous if they are not properly maintained and operated." Ex. 1005 at [0046]. Indeed, it was well known to a

POSITA that assets that are dangerous should be properly maintained and inspected to ensure proper operation.

126. A POSITA would have been motivated and found it logical and advantageous to apply Key's system to manage other assets, among them, fire hydrants, another asset for which inspections are jurisdictionally required.

127. As one example, as I summarized above in Sections X.B and XI.A.1, Chauhan discloses fire hydrants as one of various utilities to be inspected as part of its "UtilityCenter". For example, Chauhan discloses:

The second version includes new features not available in the first version, such as Sketch and sketch manager, Multiple work order types, MasterSQL, Security Manager, Custom Edit and Custom Report interfaces, AVL Interfaces, Transfer database for 3rd party data, and a new feature of the Prediction/Trace engine, i.e., ability to process Calls by District. The new Security Manager allows user administrators to allow/deny access to functionality within the application, to set permissions for who can view/edit certain database tables, or to set permissions for who can view/edit particular fields within a database table. These security setting can be set per user, or users can be assigned to groups with preset security sets. The system architecture allows managers or administrators to temporarily assign permissions to work crews. For example, **a contractor hired to do fire hydrant inspections could be given a laptop with UtilityCenter loaded on it and assigned a username that only allows him to edit and view the inspection fields on the HYDRANT theme.**

Ex. 1016 at [0207] (emphasis added).

128. Chauhan discloses that "UtilityCenter™ 10 is an integrated GIS suite of applications that manages information across the entire utility." Ex. 1016 at

[0039]. According to Chauhan, there are various “applications” and subsystems” and “the primary data” is stored in a standard “Microsoft SQL Server® database”:

UtilityCenter™ 10 is an integrated GIS suite of applications that manages information across the entire utility. The integrated suite includes deferent applications, such as uaView™, uaFM™, uaField™, uaDispatch™, etc., along with a series of plug-in modules and interface portals that add accessibility and functionality. The primary data for the UtilityCenter™ 10 is stored in a Microsoft SQL Server® database 800. The Structured Query Language (SQL) is a standardized query language for requesting information from a database, it has been the favorite query language for database management systems running on minicomputers and mainframes because it supports distributed databases (databases that are spread out over several computer systems). GIS data is stored in SQL tables. This enables several users on a local-area network to access the same database simultaneously. The UtilityCenter™ 10 includes subsystems: a uaFM system 100, a Work Management system 200, an Outage Management system (OMS) 300, a Field Management system 400, set on top of ArcMap/ArcObjects 500 and ESRI MapObjects 600 which are associated with ESRI SDE Geo Database 700. The Environmental Systems Research Inst., Inc. (ESRI) Spatial Database Engine (SDE) data can be stored in any relational database management systems (RDBMS) that is supported by SDE, including, but not limited to, Microsoft SQL Server ®, Oracle®, Access®, or in mixed implementations.

Ex. 1016 at [0039]; *see also* [0040]-[0042] and Figure 1.

129. Chauhan further discloses several other “themes” in addition to “HYDRANT” to be used with its UtilityCenter, such as “CONDUCT, WATERPIPE, GASVALVE, etc.” Ex. 1016 at [0042], [0207]. That is, consistent with the understanding of a POSITA, Chauhan discloses that various utilities to be monitored/inspected are interchangeable within its disclosed system (just like in

Key and the other prior art I discuss in this section, as well as the '966 patent's teaching in its Background section, as I discussed in Section VI and below).

130. Chauhan further discloses that the UtilityCenter is applicable to many different applications and assets and its "same technology has been tailored to the specific needs of public agencies," which further confirms to a POSITA the interchangeability and known applicability and desirability of monitoring/inspecting various assets:

Besides electric transmission and distribution utilities, **the same technology has been tailored to the specific needs of public agencies, such as fire and police departments, zoning and planning commissions, public transportation departments and others can benefit from instant access to accurate mapping information, such as gas pipeline and distribution utilities, water distribution utilities & wastewater utilities, broadband telecom providers, real property tax assessment, municipal zoning and planning, Department of Defense military applications, EMA emergency management applications, Department of Energy utility applications, and other local, state and federal governmental agencies.** Specific software application suites, such as CityCenter™ (Emergency 9-1-1, fire & police, zoning/planning, public work), CountyCenter™ (EMA, highway dept, EPA), and GlobalCenter™ (homeland security, housing, energy, interior), have been developed accordingly.

Ex. 1016 at [0218] (emphasis added).

131. Moreover, it was well known to a POSITA that fire hydrants were among the assets that needed inspection and monitoring, and that could benefit from a computerized asset management system for tracking and compliance purposes. Ex. 1022 at 304-305; Ex. 1026 at 17-18.

132. For example, in U.M. Shamsi's book, "GIS Applications for Water, Wastewater, and Stormwater Systems" (copyright 2005), Shamsi describes the "Cityworks" application that "helps users integrate their GIS and facilities management." Ex. 1022 at 304. Similar to Chauhan, "Cityworks can store project data in any SQL database, such as SQL Anywhere, Oracle, Sybase, etc." Ex. 1022 at 304. "Citywork's capabilities include data inventory, data editing, work-order management, work-order scheduling, network tracing, maintenance histories, inspections, and condition ratings" and "can also be used for managing and recording CCTV inspection programs for sewers." Ex. 1022 at 304. As part of Cityworks, Shamsi discloses various "general functions" including:

General functions of Cityworks are listed below:

- Assign work activity
- Link to service request
- Track tasks
- Track resources: labor, material, and equipment (estimated and actual)
- Link multiple inspections and tests

- Maintenance:
 - Corrective or reactive
 - Preventive or routine
 - Scheduled or cyclical
- Track permits
- Key dates and personnel
- Attach images
- Geocode and geolocate
- Print using Microsoft Word and ArcView templates and automated printing functions
- Search on any combination of work-order ID, work activity, selected map features, feature, type, key dates, key personnel, tasks, status, address, or geographical constraints.

Ex. 1022 at 304-305.

133. Shamsi further discloses various assets that are applicable to Cityworks—much like the other prior art including Chauhan and Key that a wide variety of assets are to be monitored and inspected. Among the ones disclosed in Shamsi are in Table 14.3 below including hydrants:

Table 14.3 Cityworks Inspections and Tests

Water	Wastewater	Storm
Meter inspection	Manhole inspection	Manhole inspection
Hydrant inspection	CCTV inspection	CCTV inspection
Valve inspection	Inlet inspection	Inlet inspection
Hydrant flow test	Dye test	Dye test
Meter changeout	Smoke test	Smoke test
	General test	General test

Ex. 1022 at 305.

134. As another example, in a March 2006 ESRI white paper titled “GIS Technology and Applications for the Fire Service,” the paper noted the importance of having accurate information about fire hydrants for fire and 911 personnel and that having a web-based database access to information helps improve the number of inspections. Ex. 1026 at 17-18. Consistent with the understood need and desirability to include fire hydrants as an asset in database registries to improve the inspection process, the white paper states:

In York County, South Carolina, the Fire Prevention Bureau created a database of routine were experienced by field inspectors, handheld GPS-based units were programmed for point-and-click data collection flow and pressure tests conducted on fire hydrants. After soggy

paperwork problems were experienced by field inspectors, handheld GPS-based units were programmed for point-and-click data collection.

The inspectors now perform more inspections each day because they no longer make frequent trips back to the office to hand copy notes. They accurately locate each hydrant, which enables GIS to map them, something never previously done. In York County, the hydrant map data is now available to anyone by logging on to York County's Web accessible GIS. Firefighters will be able to consult a hydrant map before they depart for a fire, see where the closest hydrants are, and know which hydrants have failed recent pressure tests.

Ex. 1026 at 17-18.

135. Beyond the teachings of Key, Chauhan, Shamsi and the ESRI white paper about the known need and desirability of systems that provided for monitoring/inspecting various assets (including fire hydrants) to ensure compliance/proper operation, many other references confirmed such need and desirability, as well as the interchangeability of such assets within asset management systems for inspection compliance and reporting. Such assets included assets for which inspection was mandated by a jurisdiction/regulator, including both life/safety and non-life/safety assets. For example, in addition to Key, Chauhan, Shamsi and the ESRI white paper, the following state of the art demonstrate this known need and desirability and asset interchangeability:

- Sweeney discloses “methods and systems for the online condition management of a construction asset. The present invention enables online monitoring of the condition of construction asset, such as a building, a roof, a parking lot, or the like. The invention also provides an Internet based design and bid procurement process that is linked to

the condition management system to enable online bidding on a construction project.” Ex. 1015 at [0002].

- Campion “relates generally to authenticated testing of life-safety equipment such as smoke detector, fire alarm, and sprinkler systems and more particularly, to providing an authenticated test report and other authenticated test related and monitoring related metrics for a life-safety equipment, such as a fire alarm control panel for facilitating on-site walkabout testing, inspection, installation, servicing, and control of fire alarm systems.” Ex. 1007 at 1:18-37, 2:11-27. It also explains that “cost control of [] maintenance procedures [to comply with local ordinances, etc. such as the Uniform Fire Code] is of great concern” and that there is a desirability to provide improved systems that reduce labor and time, among other things. Ex. 1007 at 1:27-2:27.
- Lloyd’329 discloses “[a] verification system which will help ensure compliance with water-based fire protection system testing and maintenance standards and codes set forth by recognized fire protection authorities. The system comprises at least one sensor for sensing at least one parameter of one or more water-based fire protection system components pertinent to code compliance verification, a recorder for recording and date/time stamping data from at least one sensor, a method for verifying code compliance, and a method for generating a code compliance verification report based upon the sensor data. The system provides documentation of ‘everyday’ system conditions and requisite periodic testing will enhance preparedness and performance of the water-based fire protection systems. The report can be electronically forwarded to the owner, insurer, or management company at any time, or automatically forwarded on a scheduled basis for ‘normal’ reporting. In the event of ‘trouble’ conditions requiring immediate resolution, real-time notification to appropriate entities can also be accomplished.” Ex. 1015 at Abstract, 1:24-59, 4:44-52, 5:37-6:29, 16:66-17:40, 19:58-65.
- Ratnaker discloses a “smart parking meter” that helps to automate certain processes to reduce cost, etc. Ex. 1017 at [0001], [0009].
- Silvers discloses monitoring and inspection system for oil and gas wells. Ex. 1018 at [0030].

- Jackson discloses “a computerized method for natural gas distribution compliance management” with a “database identifying a plurality of compliance events and a plurality of resources.” Ex. 1019 at Abstract, [0002]. [0009]-[0020], [0029], [0045]-[0046]. Jackson notes that “Although the present invention has specific application in the field of natural gas distribution, the compliance management system 10 has many useful features and functions that have application in many other areas.” Ex. 1019 at [0029]. Jackson explains that need to monitor the assets for repair, etc. and that “A need continues to exist for an improved compliance management system and method for accurately and efficiently managing compliance of a natural gas distribution system.” Ex. 1019 at [0008].
- McKinney “relates generally to monitoring systems and, in a presently preferred embodiment, provides a system and method for servicing and for verifying compliance related to maintenance, operation, inspection, repair, and/or service contract renewal status of environmental equipment such as wastewater treatment systems.” Ex. 1020 at [0003], [0011].
- Lloyd’150 is similar to Lloyd’329 but expands its disclosure to additional fire/life safety systems and components. Ex. 1021 at Abstract, 1:9-2:58, 5:56-6:26.

136. As I mentioned in the prior paragraph, Lloyd’150 discloses various fire/life safety systems. It further provides yet another example showing that a POSITA would have thought to apply, and had no engineering difficulty in applying, Key’s disclosure to various other fire/life safety systems (including fire hydrants as I discussed above). Lloyd’150 discloses in its Abstract:

A system and method for operational criteria compliance verification of fire/life safety systems and components whose operation, maintenance and testing are established by predetermined operational criteria, such as industry standards and fire/life safety codes. The system comprises at least one sensor for sensing at least one parameter of or resultant indicator of one or more

fire/life safety system components pertinent to operational criteria compliance verification of the fire/life safety system. A recorder records and date/time stamps data from at least one sensor. The system verifies the operational criteria compliance and generates an operational criteria compliance verification report based upon the sensor data. **The system in its preferred form verifies compliance with fire/life safety codes and generates a code compliance verification report based on these codes and associated industry standards. These reports can be electronically forwarded to the owner, insurer, or management company at any time, or automatically forwarded on a scheduled basis for "normal" reporting.** These reports further can include maintenance and notification summaries that document components that require attention depending on the nature of the problem. In the event of “trouble” conditions requiring immediate resolution, real-time notification to appropriate entities can also be accomplished.

Ex. 1021 at Abstract (emphases added).

137. As can be seen from the above Abstract, Lloyd’150 discloses a “system and method for operational criteria compliance verification of fire/life safety systems and components whose operation, maintenance and testing are established by predetermined operational criteria, such as industry standards and fire/life safety codes,” including providing reports “to the owner, insurer, or management company at any time” such as “on a scheduled basis” of system/components conditions, testing and needed maintenance. Ex. 1021 at Abstract; *see also* 21:23-22:13. Lloyd’150 specifically identifies various known fire/life safety systems and components for which compliance verification was needed were fire pump systems, sprinkler systems, fire pressure maintenance systems, fire detection/alarm systems, smoke evacuation systems, heating and

ventilation shutdown systems, elevator recall systems, fire door open/close systems, and cross-over to emergency (back-up) power systems. Ex. 1021 at 1:32-52, 2:28-58, 5:56-6:26.

138. Lloyd'150 further demonstrates the need and desirability to ensure compliance through monitoring, testing and reporting of various fire/life safety systems:

- Lloyd'150 recognized that “[t]here is a need for such a [fire/life safety] system to verify compliance of the entire fire/life safety system, particularly with respect to operational criteria such as fire/life safety codes and associated industry standards.”
- Lloyd'150 identified the known National Fire Protection Association (“NFPA”) standard and codes, among others, including testing and maintenance required to be performed at set intervals.
- Lloyd'150 recognized that “full compliance with these standards/codes is paramount to ensure that in the event of a fire, water-based fire protection systems perform as designed.”
- Lloyd'150 also recognized that “there is a need for a system and method capable of notifying insurers, property management companies, building/structure owners or other interested entities of any discrepancies or deviations in the preparedness of fire/life safety systems,” and that “[s]uch a system and method will bring about more strict code compliance, through improved testing and maintenance practices, so that reliability of fire/life safety systems will be greatly increased.”

Ex. 1021, 1:9-2:24, 7:1-42. This is true generally in the state of the art, as evidenced, for example, by Campion. Campion recognized various needs in the art for inspecting and reporting compliance for life/safety systems and components that

would be “desirable,” such as those that I discussed in Paragraph 96 above (Ex. 1007 at 2:6-33).

139. I further note that the Background of the '966 Patent admits that various assets—including those disclosed in Key and the other prior art I discussed above such as “boilers,” “elevators,” “amusement park rides,” and other objects requiring inspection such as “fire hydrants” —were interchangeable for purposes of its registry. Ex. 1001 at 1:19-39. This would have further confirmed to a POSITA that there was nothing new or novel about the particular asset to be monitored/tracked. In fact, as I discussed above, and consistent with the prior art, the '966 Patent states that a fire hydrant is a “non limiting example” and that “it should be readily appreciated that any owned asset may be substituted for the fire hydrant.” Ex. 1001 at 1:34-39. I agree with this statement in the '966 Patent's Background that a POSITA would have readily appreciated any known asset could be substituted for each other.

**B. KEY IN VIEW OF CHAUHAN, SWEENEY, AND MCKINNEY
RENDERS OBVIOUS CLAIMS 8-16**

140. In my opinion, Key in view of Chauhan, Sweeney, and McKinney discloses all of the limitations of claims 8-16, considered as a whole. I note that the claims are all obvious for the same reasons including those that I present below and in connection with claim 8.

1. Claim 8

141. In my opinion and as explained below, the combination of Key, Chauhan, Sweeney, and McKinney discloses and renders obvious claim 8.

[8pre] “A computer-implemented method for using a fire hydrant management software and a web-based registry to track requisite inspection of an owned asset comprising:”

142. In my opinion, the combination discloses the preamble, regardless of whether it is limiting.

143. More particularly, Key discloses the preamble, except it does not specifically mention a “fire hydrant” (and correspondingly, “fire hydrant management software”). However, as I discussed above in Section XI.A.2, it would have been obvious to a POSITA to apply Key’s teachings to fire hydrants as the regulated owned asset to be monitored and inspected to ensure the asset (fire hydrant) was in compliance and functioning properly.

144. Key discloses a computer-implemented method for using asset management software and a web-based registry to track requisite inspection of an owner asset, for example, Key describes such as method in its “Summary of Invention” with a centralized, web-enabled process with a central database for storing inspection data about various owned assets across multiple jurisdictions that are inspected for compliance:

The present invention meets the needs described above in a jurisdiction online manager. The system provides an **efficient, centralized, and web**

enabled process for the transfer of data between multiple jurisdictions and multiple entities required to routinely interact with the multiple jurisdictions. The system **manages required inspections** mandated by a plurality of different jurisdictions performed by non-governmental entities. The system is applicable to **pressure vessels, boilers, elevators, amusement park rides, and other required jurisdictional inspections of objects.**

The system provides **a central staging database for data.** Consequently all insurance company have a common interface and programs to support their mandated inspection functions. Hence, the inspectors have only one user interface with which to cope. In addition, the jurisdictions do not have to agree on the types, domains, or any other information because the system supports multiple jurisdiction forms. Because the jurisdictions do not have to agree on standards or need to invest in expensive development, the system should achieve early adoption by the jurisdictions.

The centralized system provides a hierarchical data structure that allows for easy updates and reverse delta storage. Furthermore, the **central system enables real time availability of current data.** Moreover, data validation can be performed as well as enforceable data fields and domains. Additionally, **complete historical information about the stored objects can be available online.**

Generally speaking, the invention **manages required inspections mandated by a plurality of different jurisdictions performed by non-governmental entities.** A central computer system receives object data for an object and most other information via a global computer network, typically the Internet. The **object data is stored in a system database.** Based upon the provided object data, the jurisdiction online manage[r] can determine the controlling jurisdiction for the object. The controlling jurisdiction is the jurisdiction in which the object is located. After determining the controlling jurisdiction, the jurisdiction's inspection form or a similar inspection template can be provided to the inspectors, who will perform the actual physical inspections of the objects. In most cases, non-governmental inspectors perform the inspections. These inspectors generally work for inspection entities, usually insurance companies that perform the mandated inspections in a plurality of different jurisdictions.

After receiving inspection result data from the inspection, **the inspection result data is stored the system database**. The inspection result data is then provided to the controlling jurisdiction. The controlling jurisdiction reviews the result data online and any review result data is stored in the system database. **The reviewed result data is provided to the inspection entity, which can view the results online.**

Ex. 1005 at [0015]-[0019] (emphases added); *see also* [0069], [0075], [0104]-[0105].

145. The central database storing the various inspection tracking information for the owned assets is depicted in Figure 7, which I discussed above in Section X.A.

146. Key further discloses that the “functions or processes in these figures are carried out in the disclosed embodiment of the present invention by **software** executing in computers” where “these figures” refers to “the drawing figures starting with FIG. 4.” Ex. 1005 at [0063] (emphasis added). Its “software architecture” is shown in Figure 4 (which I discussed further in Section X.A). Ex. 1005 at [0070].

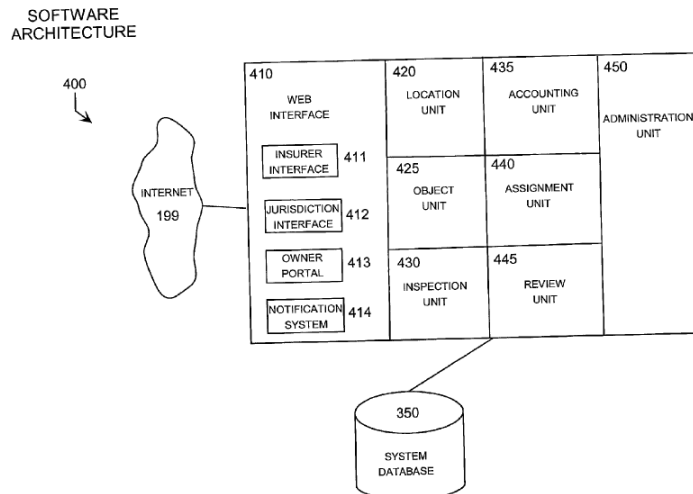


FIG. 4

147. Key also discloses server-side software for performing the disclosed processes:

The web servers 320 include a plurality of redundant similarly configured computers, two of which are illustrated, that are **operative to implement the front-end software**. The web servers 320 are operative to display information to users operating a web browser. The web servers 320 also are operative to provide notifications in a known manner usually via email. The web servers 320 are coupled to application servers 330.

The application servers 330 include a plurality of redundant similarly configured servers, two of which are illustrated, that are **operative to implement the application software**. The application server contains the logic that is used to determine which web pages are presented to the user and how to respond to the user's actions. Screen shots of various web pages utilized by the users to interact with JOM 110 are illustrated in FIGS. 16-21. The **application software also contains the necessary logic necessary to process the user's transaction and provide the associated updates and any notifications**. The application software is discussed in greater detail in reference to FIG. 4. The application servers 330 are coupled to the web servers 320 and the database servers 340.

The database servers 340 include a plurality of redundant similarly configured servers, two of which are illustrated, that are operative to

store and retrieve information from a database 350. The database servers 340 are coupled to the application servers 330. Further details of the information stored in the database 350 is provided in connection with FIG. 7.

Ex. 1005 at [0067]-[0069] (emphasis added).

148. And, for the corresponding steps to the method, I discuss those in connection with limitations [8a] through [8i].

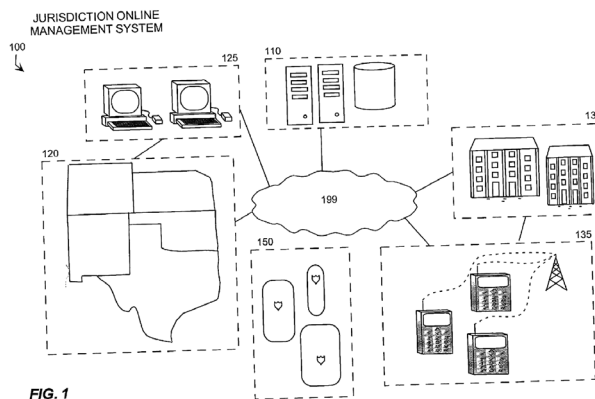
[8a] “granting remote access to a web-based registry system, wherein the web-based registry is configured to run a fire hydrant management software, to at least three classes of user, wherein the three classes of user comprise:

- (1) an owner of an asset**
- (2) an approval authority**
- (3) an inspector”**

149. In my opinion, Key alone or in combination with Chauhan discloses, or it would have been obvious to a POSITA to include as part of Key, limitation [8a].

150. More particularly, Key discloses the claimed limitation, except it does not specifically mention a “fire hydrant” (and correspondingly, “fire hydrant management software”). However, as I discussed above in Section XI.A.2, it would have been obvious to a POSITA to apply Key’s teachings to fire hydrant as the regulated owned asset to be monitored and inspected to ensure the asset (fire hydrant) was in compliance.

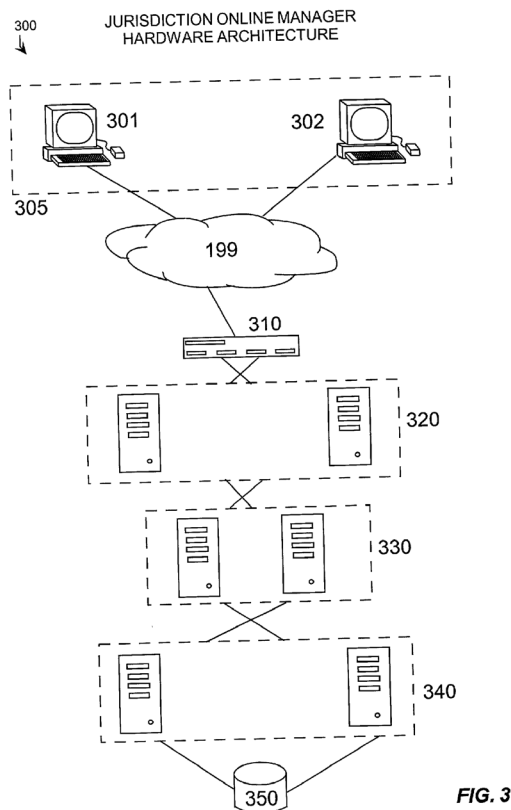
151. As shown in Figure 1, below, Key discloses a “jurisdiction online management system 100 [that] includes a jurisdiction online manager 110” (“JOM” for short). Ex. 1005 at [0045]. Key explains that the “jurisdiction online manager 110 stores object data, schedules inspections, provides the appropriate jurisdiction forms, accepts inspection data, provides inspection and repair data for jurisdictional review, accepts repair information, accepts payment, provides inspection certificates, and provides other functions which facilitate the boiler and pressure vessel inspection process.” Ex. 1005 at [0045].



152. According to Key, the jurisdiction online manager “system provides an efficient, centralized, and web enabled process for the transfer of data between multiple jurisdictions and multiple entities required to routinely interact with the multiple jurisdictions” and “manages required inspections mandated by a plurality of different jurisdictions performed by non-governmental entities.” Ex. 1005 at [0015].

153. Key discloses the “hardware architecture” of JOM 110 in Figure 3 and the “software architecture” of JOM 110 in Figure 4. Ex. 1005 at [0056]-[0057], [0064], [0070].

154. In Figure 3, below, Key depicts “the principal hardware components of the JOM 110 include a tiered application architecture to distribute different applications components over different computers.” Ex. 1005 at [0064]. As understood in the art, Key discloses “other embodiments may combine various application components onto the same servers.” Ex. 1005 at [0064].



155. As can be seen in Figure 3, above, the architecture includes client computers 305, web servers 320, application servers 330, database servers 340, and database 350. More specifically:

- “client computers 305 run web browsing applications that retrieve and display the jurisdiction online manager’s web pages” and “retrieve these web pages over a global computer network 199 such as the Internet.” Ex. 1005 at [0065]. “When a particular web page is required, the client computer 305 makes a request over the Internet 199 to a web server 320.” Ex. 1005 at [0065]. Key discloses that such client computers include “inspector client legacy computers 302 and reviewer client legacy computers 301.” Ex. 1005 at [0065].
- “web servers 320 include a plurality of redundant similarly configured computers, two of which are illustrated, that are operative to implement the front-end software,” “are operative to display information to users operating a web browser,” and “also are operative to provide notifications in a known manner usually via email.” Ex. 1005 at [0067]. “The web servers 320 are coupled to application servers 330.” Ex. 1005 at [0067].
- “The application servers 330 include a plurality of redundant similarly configured servers ... that are operative to implement the application software,” “which contains the logic that is used to determine which web pages are presented to the user and how to respond to the user’s actions.” Ex. 1005 at [0068]. “The application software also contains the necessary logic necessary to process the user’s transaction and provide the associated updates and any notifications.” Ex. 1005 at [0068]. “The application servers 330 are coupled to the web servers 320 and the database servers 340.” Ex. 1005 at [0068].
- Database servers 340 “are operative to store and retrieve information from a database 350.” Ex. 1005 at [0069]. Key further discloses that the database is “a central staging database for data” where both “real time” and “complete historical information” are stored (namely, the database is a composite database that is centralized with data across the multiple jurisdictions), with a “common interface and programs” and common “user interface.” Ex. 1005 at [0016]-[0017].

156. In Figure 4, below, Key “illustrates the principal software units or components of the JOM 110” including a “web interface” that provides Internet “access” “via a web browser” to various classes of users including (1) “owners of the objects” (the claimed “owner of an asset”); (2) “jurisdiction reviewers” or “authority” of a “regulated entity” that reviews and approves of the inspection (the claimed “approval authority”); and (3) “inspectors” (the claimed “inspector”). Ex. at 1005, [0070], [0047]-[0048], [0076]-[0077]. For example, as Key explains, “the web interface 410 provides Internet access for an insurer interface 411, a jurisdiction interface 412, an owner portal 413, and a notification system 414” and “[t]he web interface 411 [sic: 410] **provides access for the insurance company inspectors 135, jurisdiction reviewers 125, and owners of the objects** via a web browser.” Ex. 1005 at [0070] (emphasis added).

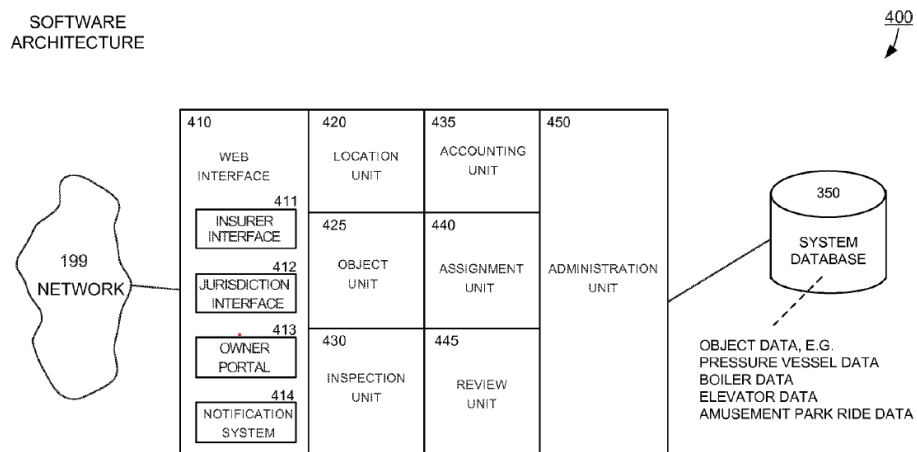


FIG. 4

157. Key further discloses that the granting of access to the various users (including owners, reviewers, and inspectors) is dependent on the particular user having proper authority, such as by entering “a user name and associated password or other security information.” Ex. 1005 at [0106], [0078] (administrator can determine user “settings and permissions” and where user information includes “user’s password and user name”), [0115]-[0123] (describing permission process including entering “username and password” to access to various “units” of Figure 4 whereby access to particular units is dependent on user’s class and corresponding authorization), Figure 8 (depicting the process for same).

[8b] “retrieving, by a computer-based fire hydrant management software system, real time records of assets from a database, the database being accessible and augmentable by a classes of user”

158. In my opinion, Key alone or in combination with Chauhan discloses, or it would have been obvious to a POSITA to include as part of Key, limitation [8b].

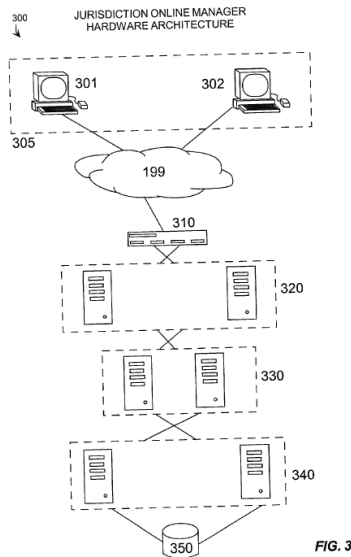
159. More particularly, Key discloses the claimed limitation, except it does not specifically mention a “fire hydrant” (and correspondingly, “a computer-based fire hydrant management software system”). However, as I discussed above in Section XI.A.2, it would have been obvious to a POSITA to apply Key’s teachings to fire hydrant as the regulated owned asset to be monitored and inspected to ensure the asset (fire hydrant) was in compliance.

160. As I discussed above regarding limitation [8a], Key discloses “a central staging database for data” such as database 350 that is shown in, for example, Figures 3 and 7 (which I discuss below). Ex. 1005 at [0017]-[0019], [0069], [0104].

161. Key further discloses that the “centralized system provides a hierarchical data structure that allows for easy updates and reverse delta storage” and “enables **real time** availability of current data” as well as “**complete historical information** about the stored objects [to] be available online.” Ex. 1005 at [0017]-[0018] (emphasis added). That is, and as I explain further below, Key discloses retrieving real time records of the assets from the database. In fact, confirming the routine nature and obviousness of doing so, it was well known to a POSITA that in asset management and compliance systems for a regulated asset or system of assets, real-time access to database records by a computer-based software system was commonly provided. Ex. 1019 at [0078] (“The compliance management system 10 may physically produced a schedule which may be a report or a database including a schedule of the resources 24 and the compliance events 22 or may be a logical schedule produced real-time by dynamically scanning the compliance events 22 and resources 24 of the compliance management database 20.”); Ex. 1020 at [0073] (“all data is preferably stored in a manner to be accessible in real time by the regulatory body without the need to search multiple

locations and/or repeatably update a plurality of remote data collecting systems 62 to a central station or website 18.”); Ex. 1017 at [0038] (“The central control station has a master database that contains all information obtained from all smart parking meters, both real time and past.”); Ex. 1018 at [0007] (“The data can be viewed at the primary and remote sites in near real time”); Ex. 1016 at [0003], [0060], [0064], [0215].

162. In Figure 3, below, Key depicts “database servers 340 ... operative to store and retrieve information from a database 350” and “coupled to the application servers 330” which run the application software. Ex. 1005 at [0069], [0104]-[0105], FIG. 7 (depicting “a data file structure of information stored in the JOM database”). According to Key, “[i]nformation stored in the database 350 can be retrieved for data manipulation and reporting” (which a POSITA would understand to include the real-time and complete historical records stored in the database discussed earlier in Key as part of its summary of the invention). Ex. 1005 at [0105].



163. Key further discloses JOM software (for example, as in Figure 4, which I described in limitation [8a] above and which I have reproduced below) that, when executed, carries out the various disclosed functions and processes in Key, including retrieving from the database (*e.g.*, database 350) various data such as the real-time asset records. Ex. 1005 at [0063], [0017]-[0018], [0067]-[0069], [0079], [0104]-[0105], FIGs. 4, 5, 6, 7. Key also notes, for example, that “[t]he drawing figures starting with FIG. 4 illustrate various functions, processes, or routines carried out by an embodiment of the present invention in which the disclosed jurisdiction online management system 100 carries out the functions described in connection with the flow charts and database maintenance” and that “[t]he functions or processes in these figures are carried out ... by software executing in computers associated with the jurisdiction reviewers 125, insurance company inspectors 135 and the [JOM] 110.” Ex. 1005, [0063]. As I discussed in

limitation [8a], Key discloses that (a) web server 320 and application server 330 contain front-end and application software, respectively, where the application software is discussed in connection with Figure 4; and (b) database server 340 communicates with database 350 that stores the records.

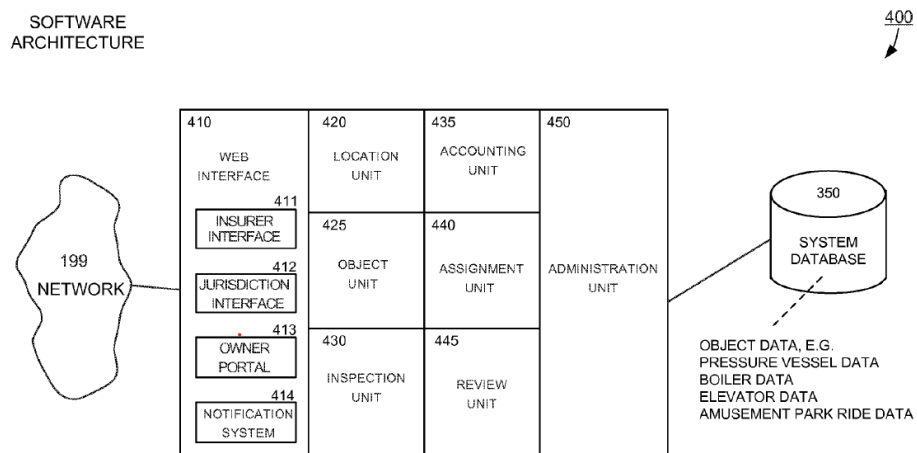


FIG. 4

164. I note that the Patent Owner in the district court case appears to assert that this limitation is met by a single class of user. Ex. 1023 at 61-62 (identifying “The City”), 57-59 (“The City” corresponds to the “approval authority”).

Regardless of whether the claimed “a classes of users” means all three claimed classes or only a single class, Key discloses that each of the various classes of users can access and update and add to (augment) the database and information contained therein, for example, that “the inspector” can “input the inspection information.” Ex. 1005, [0088], FIG. 5, [0061] (“These steps generally require

manipulations of quantities such as owner information data, location information data, scheduled dates, inspection data, review data, and other related information.”), [0081] (user enters information via web browser if authorized), [0070]-[0077] (inspectors, jurisdictional reviewers access and modify/update the information), [0017] (updates to the database), [0019] (“The controlling jurisdiction reviews the [inspection] result data online and any review data is stored in the system database.”), [0104] (“FIG. 7 illustrates a data file structure of information stored in the JOM database 350. The information illustrated in FIG. 7 is organized logically in conventional data files in the known manner, associated with one or more owners of pressure vessels or boilers.”), [0114] (“The data stored in the database is not overwritten upon the storage of edit information. The new information is appended to the existing information”), [0115]-[0123], FIG. 8 (depicting user access process), FIG. 9 (providing payment information which payment is described as being made by the owner and stored in the database, as in [0055], [0075], [0108], [0113], [0125]-[0126]), claims 1, 1, 12; limitation [8a] above (user access and modification/updating of data for each class of user including owner, inspector and approval authority).

[8c] “analyzing the records of assets from the database to identify notification events”

165. In my opinion, Key discloses, or it would have been obvious to a POSITA to include as part of Key, limitation [8c].

166. Key discloses various notifications, including via email, to notify users of relevant information such as events. For example, Key discloses the following:

- “the application software also contains the necessary logic necessary to process the user’s transaction and provide the associated updates and any notifications.” Ex. 1005 at [0068].
- “The notification system 414 is operative to send communications to users of the JOM 110. The notification can be accomplished by an e-mail delivered via the Internet 199. Other notification means include an automatically generated telephone call, a facsimile, a wireless communication delivered via a wireless transmitter to a pager, mobile phone, or other wireless device, a wireless message delivery by wireless application protocol (WAP) to a hand held computing device, or other suitable methods for delivering messages.” Ex. 1005 at [0071], FIG. 4.
- “The web servers 320 also are operative to provide notifications in a known manner usually via email.” Ex. 1005 at [0067].
- “The work assignment unit automatically schedules inspection for objects with upcoming inspection due dates. The scheduled work assignment is operative to generate and place the task in the insurance company scheduled inspection listing.” Ex. 1005 at [0076].

167. In Figure 5, below, “the JOM analyzes the database to determine those objects requiring scheduling of an inspection.” Ex. 1005 at[0080]. At step 525, “the JOM schedules the object for an inspection.” Ex. 1005 at [0083]. At step 530, “the JOM determines if any object requires inspections in the near future,” and if YES, at step 535, “the inspection is scheduled” whereby “[t]he JOM computes the required inspection based upon the last performed inspection and the required inspection frequency” and “a task is generated and placed in a task listing

for the covering insurance company for those objects with upcoming required inspections.” Ex. 1005 at [0084]. As is evident by the description in Key, the JOM (a) analyzes the database for objects that need an inspection to be schedule, (b) determines objects requiring such an inspection, and (c) calculates a particular designated time interval (*i.e.*, the time between the last inspection performed and the next inspection that needs to be performed by on the required inspection frequency). For example, in Key’s system, the JOM would analyze the database to determine objects that “require[] inspection in the near future” (which a POSA would have understood to logically be a designated, such as 60 or 90 days from the inspection deadline). Likewise, in Key’s system, if an object required an inspection every 90 days, and an inspection was performed today, the JOM would calculate that the next inspection was due at the next predetermined interval (*i.e.*, in 90 days). Key provides a similar description in the context of Figure 6, whereby “the JOM updates the inspection date” and the “updated inspection date is used by the JOM to calculate the next required inspection.” Ex. 1005 at [0099].

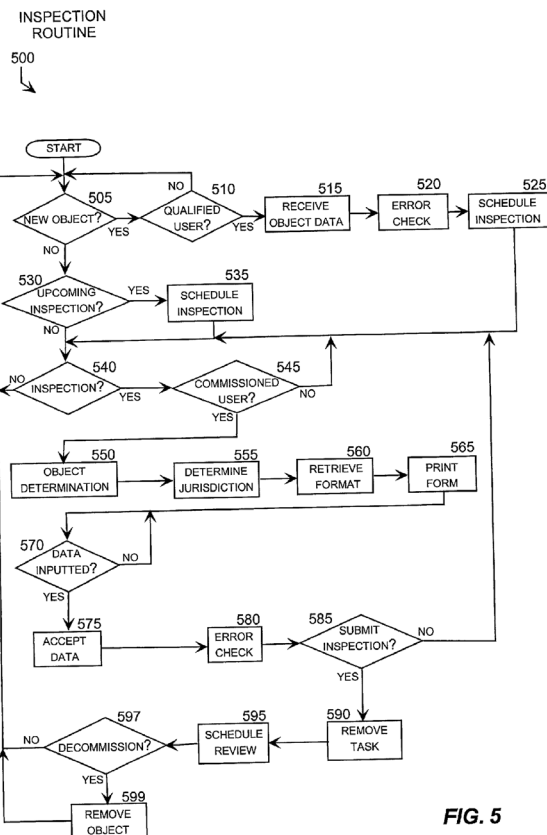


FIG. 5

168. Key discloses other examples of analyzing asset records from the database including (a) “object data is stored in a system database” and “[b]ased upon the provided object data, the jurisdiction online manage[r] can determine the controlling jurisdiction” and (b) “[t]he system can automatically determine objects with upcoming inspections due dates and provide this information to the inspection entity.” Ex. 1005 at [0018], [0020].

169. In Figure 16, below, the JOM generates a homepage 1600 that includes task listing 1612 such as tasks that are overdue, and scheduled inspections for owned assets. Ex. 1005 at [0183]-[0186].

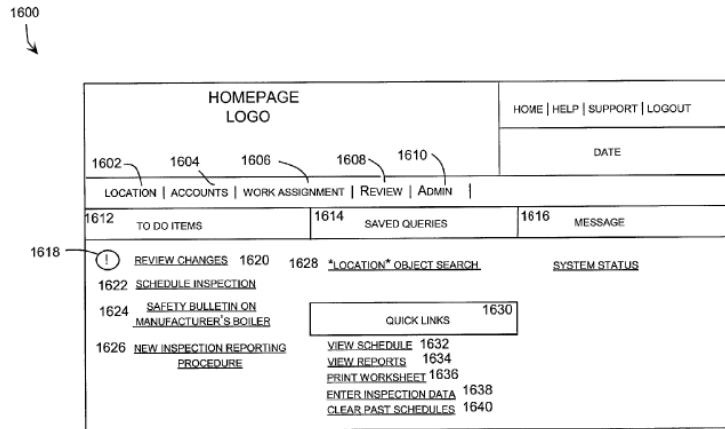


FIG. 16

170. As another example, Key discloses a review unit 445, wherein if the review is rejected, “the owner is automatically notified and another inspection is scheduled.” Ex. 1005 at [0077].

171. Based on these disclosures that I have described above, a POSITA would have understood that the above-described notifications and/or task listings for the various tasks such as scheduled inspections, overdue inspections, upcoming inspection deadlines, inspection review rejections, etc. for the owned assets correspond to the claimed notification events that are identified based on analysis of the asset records from Key’s database. All of these are notification events that are logically sent as part of the various notifications to keep the relevant users apprised of relevant events such that the user can take any appropriate action necessary. Moreover, also as evidenced by these disclosures, a POSITA would

have understood that the notification events include a predetermined interval in advance of an inspection deadline for an asset.

[8d] “based on the analysis, notifying an owner of an asset of a notification event, wherein the notice includes a standard format description of the type of inspection, and a cost associated with the type of inspection, and wherein the notification event comprises a designatable interval in advance of an impending deadline for the inspection, and wherein the owner of the asset, upon remotely accessing the fire hydrant management software compliance registry, may update and review the status of the assets”

172. In my opinion, Key alone or in combination with Sweeney discloses, or it would have been obvious to a POSITA to include as part of Key, limitation [8d].

173. I address this limitation [8d] in two parts.

174. Looking first at the first part of the limitation, Key discloses the claimed “based on the analysis, notifying an owner of an asset of a notification event, wherein the notice includes a standard format description of the type of inspection, and a cost associated with the type of inspection, and wherein the notification event comprises a designatable interval in advance of an impending deadline for the inspection...”

175. As I discussed for limitation [8c] above, Key discloses a “notification system” to notify users of notification events including a designated interval in advance of an upcoming inspection deadline for the owned assets where

notifications are sent, for example, “in a known manner usually via email,” including automatic notification to owners, based on database record analysis.

176. Key also discloses “receiving an inspection notification; and scheduling an inspection date.” Ex. 1005 at claim 19. A POSITA would have understood that such an inspection notice is sent to the owner to notify the owner of the upcoming inspection.

177. I note that Key provides certain details about its notices, as well as discloses various relevant information that is provided and made available to the relevant users. As I discuss below, it would have been logical, and was in fact, known, to a POSITA that such notices would routinely include a wide variety of information relevant to the inspection with a standard format description (such as inspection type, cost, inspection due date, etc.) based on the database record analysis.

178. Key discloses the following relevant to a POSITA’s understanding:

- “[t]he complexity of ensuring proper data nomenclature and format required by each specific jurisdiction is solved by the jurisdiction online manager” (*e.g.*, a particular format and standard description is to be used to simplify/streamline communications);
- “[t]he system also manages the payment of proscribed fees and the issuance of certificates” (*e.g.*, associated inspection costs must be provided for fees to be paid);
- “the JOM performs notification of the acceptance and prompts payment,” which “[n]otification can be performed by email” (*e.g.*, notifications to owners including payment information);

- “the JOM updates the inspection date,” which date “is used by the JOM to calculate the next required inspection” (*e.g.*, inspection deadline at a predetermined interval); and
- “[e]ach regulatory entity 120 has the authority to determine the required inspections and the inspection frequencies for pressure vessels and boilers....” (*e.g.*, inspection types and frequency depending on asset, jurisdiction, etc.).

Ex. 1005 at [0043], [0047]-[0048], [0060], [0097], [0099], FIG. 7.

179. Key also discloses using standard forms or templates as part of its system: the JOM “determine[s] the controlling jurisdiction for the object,” after which “the jurisdiction’s inspection form or a similar inspection template can be provided....” Ex. 1005, [0018]; [0045] (JOM “provides the appropriate jurisdiction forms” and “provides other functions which facilitate the boiler and pressure vessel inspection process.”), [0016] (“common interface and programs to support their mandated inspection functions”), [0047], [0087], claims 1, 12, 22, 32.

180. I further note that Key’s teachings to use standard forms and nomenclature (descriptions) are not limited to inspection forms. For example, Key discloses that “[t]he complexity of ensuring proper data nomenclature and format required by each specific jurisdiction is solved by the jurisdiction online manager” and also that its system is designed to “direct[] the inspection process from installation of the object to the object’s decommission.” Ex. 1005 at [0043]. That is, Key’s teachings apply throughout the entire asset lifecycle, which includes providing relevant information in a standardized jurisdictional format and

nomenclature to the relevant stakeholders including owners, inspectors and authorities.

181. Consistent with the above-discussed disclosure in Key—including that relevant information is to be shared, particular formats and nomenclature are to be used, inspection dates are calculated, inspections are scheduled and must be paid for, and notices are provided about required inspections based on notification events including a designated interval in advance of an inspection deadline—a POSITA would have understood that the disclosed notifications would logically and advantageously be in a particular standard format description and include the relevant details for the owner (inspection type needed, inspection due date, cost due, etc.) sent based on a notification event at a particular set time in advance, *e.g.*, such that the owner would have sufficient notice after which to schedule an inspection within the deadline. This is further evidenced by the state of the art, which likewise teaches standard format descriptions for notices. Ex. 1020 at [0080] (“standardized warning letters to advise about regulations requiring renewal of the service contract”), [0057] (“form letters” or “[o]ther types of communications” sent to homeowner); Ex. 1024 at 4 (disclosing inspection types in sample reports for users including asset owners); Ex. 1032, [0121] (setting and notifying of predetermined service intervals).

182. It was also known that it was necessary and important to provide stakeholders with relevant information needed to perform tasks, make decisions, etc. For example, Chauhan explains that providing cost information is “invaluable” for purposes of budgeting and preparing reports and that providing the relevant information “makes managing work easier than ever before by giving managers fingertip access to information concerning job status”:

Because the UtilityCenter™ is fully integrated with the utility's Customer Information and Accounting software, cost estimates can be generated quickly. The uaField™ 100 handles multiple job scenarios and provide estimates of their job costs. The user has the option to use either unit costs or hourly costs. **Updated material cost and labor rates are utilized to formulate an accurate estimate of the cost of building the job as designed. This information is invaluable when analyzing the efficiency of work processes, budgeting for future growth and preparing managerial cost reports. The UtilityCenter™ 10 makes managing work easier than ever before by giving managers fingertip access to information concerning job status.** With the click of a mouse, managers can view what jobs are pending, assigned and in progress. Truck location can be displayed onscreen as crews move throughout the system completing assigned jobs.

Ex. 1016 at [0085] (emphasis added), [0167].

183. This teaching in Chauhan regarding the importance of providing cost information would also apply to Key's system and the need to provide cost information to an owner to allow the owner to pay for services (*e.g.*, inspections) as disclosed in Key. The known need to provide relevant information to the relevant user is further evidenced by other prior art, for example, Woodings

explaining the need for owners in “regulated industries” to track information to comply with state and federal requirements, and provide such compliance certification information to various partners including government agencies. Ex. 1025 at [0006] (“Out-dated, erroneous or lost information, delays, reduced productivity, and low morale are just a few of the problems associated with conventional efforts to exchange documents with business partners and manage workers, documents and associated tasks or jobs. More importantly, in regulated industries, business owners must comply with a host of state and federal requirements and worker certifications, all of which must be tracked, kept current and provided to various business partners including government agencies. In addition, there are numerous issues associated with the proper allocation, tracking, and distribution of funds associated with the projects.”).

184. I further note that Patent Owner in the district court case took a broader interpretation of this limitation, asserting that “cost” can be effectively any information provided to the owner and that notice can be satisfied by email or a phone call. Ex. 1030 at 59-60 (“broad term ‘cost’ includes (without limitation) ‘time’, ‘effort’, and ‘price’” and may be met in “multiple ways” including that “the municipality sends the notice that requires the owner’s involvement” or “details a required inspection by a licensed company” and that notice may be satisfied “by emails and phone calls”), 28-30, 74-76. If this interpretation is applied, the prior art

discloses such “cost” information under this view (as well under the plain meaning of cost).

185. To the extent Key alone does not disclose or render obvious this step—including the particular details and format—the combination of Key and Sweeney does and confirms to a POSITA the obviousness of such inclusion in Key’s notification to the owner.

186. Sweeney discloses that “[t]he asset owner may be provided with access to a web page listing all the construction assets owned by the asset owner (e.g., an asset owner home page)” and further individual web pages for each asset. Ex. 1006 at [0039]. Sweeney further discloses “generating computerized reports in response to user queries” that “may relate to one or more of the plurality of the construction assets and be generated according to at least one of age of the construction asset, a rated condition of the construction asset, a type of the construction asset, recommended repairs listed on the inspection report 12, date of construction, date of last repair, expected remaining lifetime of the construction asset, contractors responsible for construction of or repairs to the construction asset, a location of the construction asset, repair history, repair type, repair costs, defect history, and the like.” Ex. 1006 at [0042], [0017] (email notification to asset owners).

187. As with the notice in Key to provide relevant information to the owner, Sweeney discloses providing relevant information (including cost, asset type, repairs, inspection history, etc.). This provides further confirmation to a POSITA that such relevant information is provided in a form report to the owner such that the owner can take the necessary actions, *e.g.*, engage inspectors for the appropriate inspection, obtain the necessary repairs, and pay the appropriate amount for the same.

188. Turning to the second part of the limitation, Key discloses the claimed “... and wherein the owner of the asset, upon remotely accessing the fire hydrant management software compliance registry, may update and review the status of the assets.”

189. Key discloses that the owner may remotely access the management software compliance registry via a web interface, and update and review the status of the assets, such as providing “accounting information” which “includes payment information, object information, invoice information,” etc. via the “accounting unit 435” and results in an update regarding, for example, the asset being in paid for and being in compliance. Ex. 1005 at [0070], [0075], [0125]-[0129], FIG. 7 (payment information stored in database), FIG. 9 (accounting interface), FIG. 13 (object interface); *see also* limitations [8a], [8b] (describing owner remotely accessing software compliance registry and updating asset status).

190. I note that Patent Owner in district court asserted that the claim does not require the “owner of the asset, upon remotely accessing the ... registry, may update ... the status of the assets” but rather that it is enough that, *e.g.*, the approval authority may. Ex. 1030 at 58-59, 6-28, 72-74; Ex. 1002 at 227-28. Key also discloses this.

[8e] “based upon the analysis, sending a standard format notice to the approval authority of the status of the assets assigned to the approval authority, and wherein the approval authority, upon accessing the web-based registry, may update and review the status of the assets assigned;”

191. In my opinion, Key discloses, or it would have been obvious to a POSITA to include as part of Key, limitation [8e].

192. I address this limitation [8e] in two parts.

193. Looking at the first part of the limitation, Key discloses “based upon the analysis, sending a standard format notice to the approval authority of the status of the assets assigned to the approval authority...”

194. This part is similar to the first part of limitation [8d], differing primarily in the fact the notice is directed to the approval authority instead of the owner. However, the same logic that I discussed above regarding limitation [8d] applies to sending standard form notices to the approval authorities.

195. As an initial matter, as I have discussed, Key discloses providing notifications to users (such as approval authorities, etc.). For example, as discussed in limitation [8c], Key discloses:

- “The notification system 414 is operative to send communications to users of the JOM 110. The notification can be accomplished by an e-mail delivered via the Internet 199. Other notification means include an automatically generated telephone call, a facsimile, a wireless communication delivered via a wireless transmitter to a pager, mobile phone, or other wireless device, a wireless message delivery by wireless application protocol (WAP) to a hand held computing device, or other suitable methods for delivering messages.” Ex. 1005 at [0071], FIG. 4.
- “The web servers 320 also are operative to provide notifications in a known manner usually via email.” Ex. 1005 at [0067].
- “the application software also contains the necessary logic necessary to process the user’s transaction and provide the associated updates and any notifications.” Ex. 1005 at [0068].

196. As I discussed in limitation [8a], Key discloses that its users of the JOM include the reviewer (approval authority), as well as the asset owner and the inspector, for example, depending on whether the user is authorized. Ex. 1005 at [0067]-[0068], [0093]-[0096] (jurisdictional reviewer accessing JOM), [0123] (same), [0177], FIG. 15.

197. A POSITA would have understood that Key’s disclosure of sending notifications to “users of the JOM 110” includes the various classes of users, including the reviewer (approval authority). Indeed, this makes sense, as a POSITA would have understood the need to, and advantages of, providing the

approval authority (and other users) with relevant information to perform the functions within the JOM, for example, for the same reasons I explained above in limitation [8d].

198. For example, as I explained, consistent with the disclosure in Key, a POSITA would have understood that the disclosed notifications would logically and advantageously be in a particular standard format and include the relevant details for the relevant stakeholder (for the approval authority, the status of the asset, inspection information, compliance information, etc.). This again is further evidenced by the state of the art, which likewise teaches standard format descriptions for notices. Ex. 1020, [0080] (“standardized warning letters to advise about regulations requiring renewal of the service contract”), [0057] (“form letters” or “[o]ther types of communications” sent to homeowner); Ex. 1024 at 4 (disclosing inspection types in sample reports for users including asset owners).

199. Also as I explained in limitation [8d] and as I discuss further below, the importance and logic of providing necessary information to the necessary stakeholders at the appropriate times was also well known and understood to a POSITA. Ex. 1005 at [0015], Ex. 1025 at [0006]; Ex. 1015 at [0085], [0167].

200. Key provides additional disclosure regarding its notification process including that (a) “object data is stored in a system database,” (b) “[b]ased upon the provided object data, the jurisdiction online manage[r] can determine the

controlling jurisdiction” and (c) “[t]he system can automatically determine objects with upcoming inspections due dates and provide this information to the inspection entity.” Ex. 1005 at [0018], [0020]. Although this particular disclosure in Key is describing providing information to the inspection entity based on the database analysis (and limitation [8d] concerned notification to owners), as I have discussed, a POSITA understood and found advantageous to provide relevant information to the appropriate JOM stakeholders such that they could take the appropriate actions (e.g., to the controlling jurisdiction such that they can passively monitor and keep up-to-date on compliance or inspection status of assets within their jurisdiction, and better and more efficiently manage the mandatory inspection process and regulatory oversight, and improve information flow across the relevant stakeholders). Ex. 1005 at [0002], [0014]-[0015]; Ex. 1020 at [0045] (regulatory bodies have limited funds and employees and so there is a need for the body to automatically be notified of relevant information and events), [0032] (generating reports for regulatory body related to compliance), [0051] (“reports related to the service contracts to be forward to be regulatory body may be automatically generated based on whether the monitoring services utilizing unit 10 has been paid for by the service company”), [0073]; Ex. 1021, Abstract (automatic reporting to various stakeholders for purpose of notices and compliance).

201. I further note that, in addition to the owner and inspectors, Key also discloses providing notice directly to the controlling jurisdiction as well:

After receiving inspection result data from the inspection, the inspection result data is stored the system database. The inspection result data is then provided to the controlling jurisdiction. The controlling jurisdiction reviews the result data online and any review result data is stored in the system database. The reviewed result data is provided to the inspection entity, which can view the results online.

Ex. 1005 at [0019], Abstract, [0077] (review unit), [0091] (“the JOM schedules the inspection to be reviewed by the jurisdiction” and “generates and places a task in the jurisdiction task listing”), [0177]-[0182] (review, access and update data, *e.g.*, “enters comments” and acceptance or rejection), FIGs. 15, 20, 21.

202. Key further discloses that each jurisdiction (regulatory entity) “requires the inspection information **in its format** utilizing its categories and domains,” and “evaluate[s] each inspection, repair, and other data to ensure compliance with the jurisdiction’s requirements.” Ex. 1005 at [0047] (emphasis added).

203. Consistent with Key’s disclosure and stated goals and my discussion in limitation 8[d] regarding standard format notices, a POSITA would have understood that the information provided to the approval authority based on the analysis would be in a standard format, as well as known in the art. Ex. 1005 at [0018], [0043], [0045], [0047], [0087], claims 1, 12, 22, 32; Ex. 1020, [0058]

(“Regulatory agency 40 can also obtain status reports regarding timely repairs....”).

204. I note that Key also visually depicts web-pages for reviewers (approval authority) which includes a standard layout and provides further confirmation of the standard formatting.

205. For example, Figure 20 depicts a “review web page 2000” that “lists the open reviews needing performance,” “provides links to perform the review,” “lists the type of review required,” etc. Ex. 1005 at [0195].

2000

REVIEW CHANGES				
2010	2020	2030	2040	2050
	DATE	TYPE	DESCRIPTION	SUBMITTER
REVIEW	7/23/200	LOCATION	330 MAIN ST	
REVIEW	8/1/2000	BOILER	LA104332 - NB342322	
REVIEW	8/1/2000	PV	LA1023577 - NB123123	
REVIEW	8/1/2000	INSPECTION	BOILER - LA1023343 - INTERNAL	

FIG. 20

206. Figure 21 depicts a “review object web page 2100” including “review object edit.” Ex. 1005 at [0196].

2100

REVIEW BOILER EDITS - 10/10/2000 BY "JURISDICTIONREVIEWER"		
2110	BOILER DETAILS	2140 CURRENT VALUE LA1234567
	JURISDICTION #	2150 OLD VALUE
	INS CO #	HB123456
	OTHER #	
	DATE LAST INSPECTED	10/10/1000
	INSPECTION FREQUENCY	ANNUAL
	SPECIFIC LOCATION	MAIN BLR RM
	OWNER #	
	MANUFACTURER	CLEAVER
	TYPE	PWB
	YEAR BUILT	
2120	BILLING/OWNER DETAILS	1972
2130	ENTER COMMENTS HERE	
	ACCEPT	2160
	REJECT	2170
	RESET	2180

FIG. 21

207. Looking next at the second part of limitation [8e], Key discloses “... wherein the approval authority, upon accessing the web-based registry, may update and review the status of the assets assigned.”

208. As I discussed above in limitations [8a] and [8b], Key discloses that the approval authority may remotely access the registry via a web interface, and update and review the status of the assets, such as “the performance of a jurisdiction review,” “accept comments,” and “[u]pon acceptance of a review item, the item is deleted from a task listing.” Ex. 1005 at [0065], [0070]-[0077] (jurisdictional reviewers access and modify the information), [0111] (jurisdiction review file includes, *e.g.*, result of review and associated comments), [0123] (review unit access), [0177]-[0182] (review, access and update data, *e.g.*, “enters comments” and acceptance or rejection), [0196], FIGs. 7, 21, claim 1 (“providing object inspection result data on-line to the object controlling jurisdiction via the global computer network; receiving review result data on-line from the object controlling jurisdiction via the global computer network; storing the review result data in the at least one database”), claim 11 (“The method of claim 1, further comprising the step of providing to the controlling jurisdiction for review changes from previous object inspection data.”).

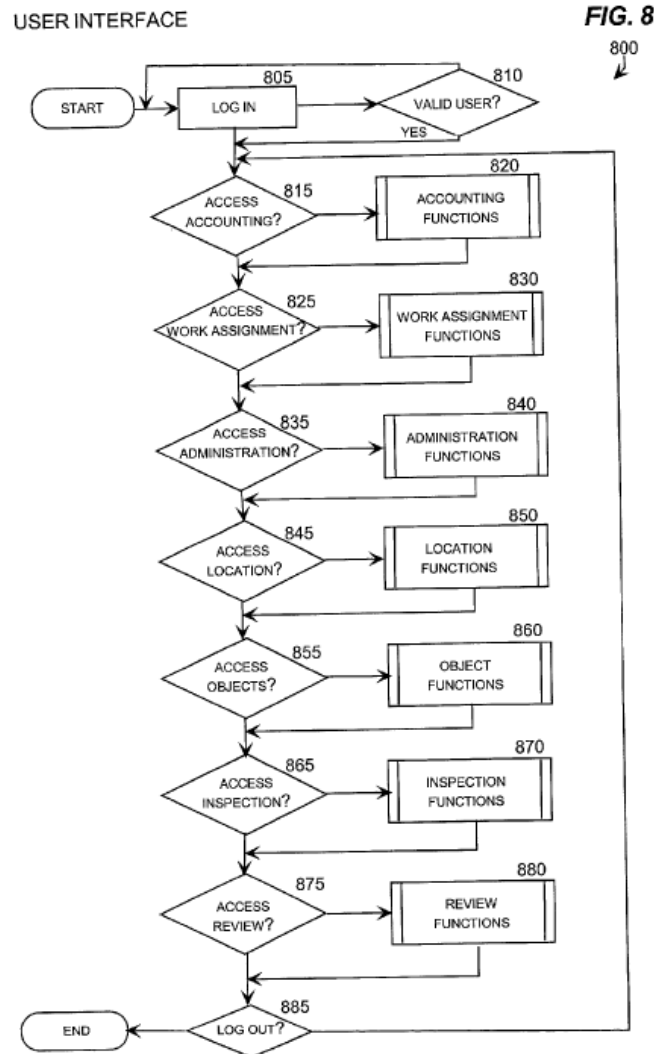
[8f] “upon logging on to a password controlled website configured to provide access to the fire hydrant management software, providing to an inspector the owner selects, the selection based upon a list of qualified inspectors that are available to inspect the asset based upon attributes including proximity to the asset, a web-based template configured to describe the asset an[d] each of the steps of the inspection;”

209. In my opinion, Key alone or in combination with one or both of McKinney and Sweeney discloses, or it would have been obvious to a POSITA include as part of Key, limitation [8f].

210. As I discussed above in limitation [8a], Key discloses that users (including inspectors) log on to a password protected website to access the management software. Ex. 1005, [0106], [0115]-[0123], [0078], FIG. 8. I again note that, as I explained above in Section XI.A.2, it would have been obvious that such management software was for fire hydrant management.

211. Figure 8, below, “illustrates a flow chart of an embodiment of one user interface process.” Ex. 1005 at [0115]. “The process starts at step 805, in which the user requests an access web page provided by the JOM,” which “prompts the user for the username and password” and which, if authorized, “provides the user with a homepage generated for that user.” Ex. 1005 at [0115]-[0116]. At step 865, “the JOM determines if the user has requested to access the inspection unit,” and the user “has the requisite permission” (namely, is an

authorized inspector) then the process continues to the “YES branch of step 865 [and] is followed to routine 870.” Ex. 1005 at [0122].



212. Key further discloses templates and forms for inspections. For example, Key discloses:

- “the jurisdiction’s **inspection form** or a similar **inspection template** can be provided to the inspector.” Ex. 1005 at [0018] (emphasis added).
- The JOM “is designed to automatically provide the appropriate jurisdiction inspection data requirements and **forms** to commissioned inspectors....”). Ex. 1005 at [0042] (emphasis added).

- The JOM “provides the appropriate jurisdiction **forms.**” Ex. 1005 at [0045] (emphasis added).

213. Key further discloses that the template may be an “online inspection template information” after which “inspection result data based upon the inspection template information” is received. Ex. 1005 at claim 1; *see also* claim 22 (“inspection template information based upon the controlling jurisdiction”), Abstract (“After determining the controlling jurisdiction, the jurisdiction's inspection form or a similar inspection template can be provided to the inspectors, who will perform the actual physical inspections of the objects”).

214. Key also provides visual examples. For example, Figure 19, below, “illustrates a screen shot of an inspection web page 1900” that “allows an inspector to enter or edit inspection data.” Ex. 1005 at [0193]. The inspection web page includes a form template that “displays the basic object information 1910 associated with the inspection” including an asset description, as well as data entry boxes and pull down boxes for the various required data to guide the inspector through the inspection. Ex. 1005 at [0193]-[0194]. After the inspector completes each step of the data entry and pull down boxes, the inspector can submit the inspection (via submit button 1950). Ex. 1005 at [0194].

1900

EDIT INSPECTION

HELP

UPDATE INSPECTION DATA

1910 FIRETUBE BOILER - LA1234567 - *MANUFACTURER*S - 1998

1915 CATEGORY SAFETY VALVE - CAPACITY TOO LOW - #1231

1920 DATE 02/02/2002

1925 STATUS OPEN

1930 INSPECTOR (CHANGE) *INSPECTOR*

1935 TYPE (CHANGE) VIOLATION

1940 CONDITION THE BOILER ROOM HAS INSUFFICIENT OUTSIDE AIR.

1945 REQUIREMENT PROVIDE AT LEAST 14 SQUARE INCHES OF OUTSIDE FRESH AIR FOR COMBUSTION.

SUBMIT CANCEL DELETE

1950 1955 1960

FIG. 19

215. Key further discloses a step-by-step process for the inspection, as in Figure 14, below, which “illustrates an embodiment of a[n] inspection interface routine 870.” Ex. 1005 at [0168]-[0176]. In fact, it was well-known to a POSITA to include such step-by-step instructions to allow for an inspector to enter information about the inspection of an asset, as evidenced by the state of the art. Ex. 1007 at 3:18-22 (“illustrating another screen of a user interface for further interacting with an authentication server in connection with testing a life safety system in a network environment including a remote accessory consistent with embodiments of the present invention”), 11:61-12:17, FIG. 9.

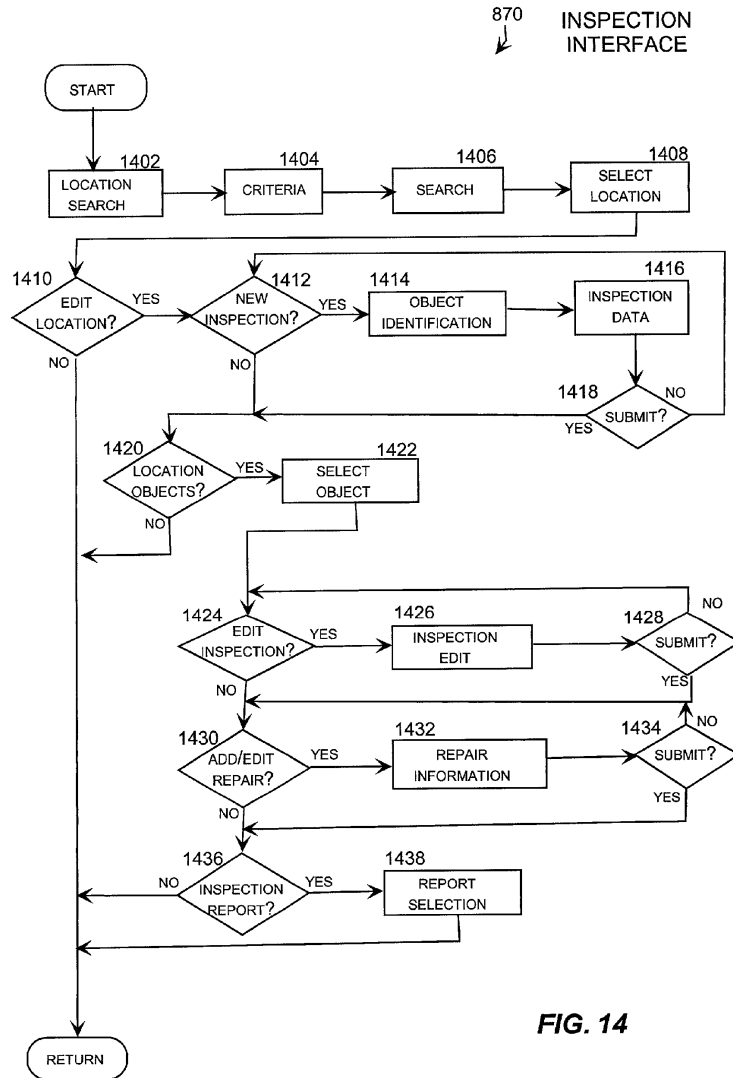


FIG. 14

216. Key also discloses that each “inspector 135 must be **qualified by a jurisdiction** 120 and receive a commission in order to perform an inspection in **that jurisdiction** 120.” Ex. 1005 at [0048] (emphases added), [0051]. A POSITA would have understood that Key discloses that inspections of the assets within a jurisdiction are by qualified inspectors that are located within proximity of the asset (*i.e.*, within the jurisdiction of the asset). In other words, in Key, being within the jurisdiction of an asset is a proxy for being within proximity of the asset. I note

that this is consistent with the infringement position Patent Owner took in the district court case, asserting that, regardless of whether the owner actually selects the inspector or whether such owner-selected inspector was “available to inspect the asset based upon attributes including proximity to the asset,” the claimed limitation was still met. Ex. 1030 at 70-72.

217. I also analyze this claim under the plain language as understood by a POISTA. That is, to the extent that the claim requires that (a) the inspector be selected by the owner and (b) selection based upon a list of qualified inspectors that are available to inspect the asset based upon attributes including proximity to the asset—as the plain language of the claim dictates—limitation [8f] is disclosed by the combination of Key and McKinney and/or Sweeney.

218. I summarized McKinney in Section X.D. McKinney discloses “a system and method for servicing and for verifying compliance related to maintenance, operation, inspection, repair, and/or service contract renewal status of environmental equipment such as wastewater treatment systems.” Ex. 1020 at [0003], [0045] (system for regulatory compliance), [0064] (“servicing includes maintenance, repair, inspection,” etc.).

219. McKinney also discloses that (a) the system “may also provide for online contracts or sales with service providers of choice whereby the homeowner or other responsible party can contract with, change contracts, or the like, with a

desired service company through [a] website....” (*i.e.*, owner-selection), (b) “[d]epending on regulatory requirements, service personnel may be required to be authorized representatives” and owners “may be contracted to have certified servicing performed by a service company utilizing certified personnel” (*i.e.*, qualified inspectors), and (c) “service personnel that are in a particular area may be able to log into or have the service company log into the scheduler to determine if efficiencies can be achieved by performing inspections while the service personnel is already in that area” whereby such “scheduler function ... is likely to reduce operating costs for the service company” (*i.e.*, the inspector is within proximity of the asset). Ex. 1020 at [0063]-[0064], [0080].

220. I summarized Sweeney in Section X.C. Sweeney discloses “methods and systems for online management of construction assets.” Ex. 1006, [0007]. Sweeney discloses an “online bid submission form ... provided to a plurality of contractors for use in submitting a bid on the project [related to the construction asset].” Ex. 1006 at [0043]. Contractors authorized to submit bids may be limited by location (“e.g., area, regional, or national”), that is, in proximity to the asset. Ex. 1006 at [0043]. According to Sweeney, “[t]he asset owner can be provided with online access to the submitted bids ... in order to select[] a winning bid from the submitted bids,” that is, the owner selects the contractor (which, as applied to

Key's JOM, the qualified inspector to inspect the asset based on attributes including proximity to the asset). Ex. 1006 at [0043]-[0044], FIG. 1.

221. Based on these teachings, a POSITA would have understood that it would have been logical and advantageous that the owner could select—*e.g.*, for reasons of efficiency to get the inspection performed quickly/immediately, reduced labor cost that could be passed on to the owner or benefit the inspector, and/or quality of work/bid parameters—a qualified inspector within proximity of the asset. The known and understood location-based selection of qualified workers is further evidenced by the prior art and state of the art. Ex. 1005 at [0048], [0051] (qualifying inspectors within a jurisdiction). Ex. 1006 at [0007], [0043]-[0044] (owner-selected contractors within area/region of asset); Ex. 1020, [0001], [0045], [0063]-[0064], [0080] (owner-selected qualified inspectors based on, *e.g.*, asset proximity); Ex. 1025 at Abstract, [0294], [0341] (selection based on verifications/representations); Ex. 1007 at 2:37-43 (“The term ‘inspector’ as used herein can refer to a Fire Official or inspector such as someone who is responsible through authority bestowed by the town, municipality, county, state or other governmental agency or body, to certify that life safety/fire alarm safety equipment associated with a building is properly maintained and inspections are up to date and in conformance with any local, state, federal or other regulations,” that is, only

those inspectors that are approved within the location of the asset may perform an inspection).

222. As an additional example allowing owner selection of qualified inspectors based on attributes including asset proximity that results in improvements/advantages when put into a system, Chauhan discloses “smart features” that allow selection of crews based on location (such as within a district or a search radius) as well as based on a specific type of crew, which a POSA would have understood improved response time, reduced costs, and ensured that the appropriate crew was selected. Ex. 1016 at [0217].

[8g] “receiving from the inspector, inspection information in specific response to the web-based template;”

223. In my opinion, Key discloses, or it would have been obvious to a POSITA include as part of Key, limitation [8g].

224. As I discussed in limitation [8f], Key discloses providing “the jurisdiction’s inspection form or a similar inspection template ... to the inspectors...” Ex. 1005 at [0018], claim 1 (“displaying customized online inspection template information...” and “receiving inspection result data based upon the inspection template information from a plurality of non-governmental inspection entities via the global computer network”), [0042], [0045], [0047], [0087]-[0088].

225. Also as I discussed in limitation [8f], Key discloses a web-paged inspection template (such as in Figure 19, below) that “allows an inspector to enter or edit inspection data” via provided data entry or pull down boxes (thereby providing inspection information in specific response to the template) and “submit and store the completed inspection by activation of the submit button 1950” (such that it is received by the JOM system). Ex. 1005 at [0193]-[0194], FIG. 19.

1900

EDIT INSPECTION

UPDATE INSPECTION DATA

1910 FIRETUBE BOILER - LA1234567 - *MANUFACTURER*S - 1998

1915 CATEGORY SAFETY VALVE - CAPACITY TOO LOW - #1231

1920 DATE 02/02/2002

1925 STATUS OPEN

1930 INSPECTOR (CHANGE) *INSPECTOR*

1935 TYPE (CHANGE) VIOLATION

1940 CONDITION THE BOILER ROOM HAS INSUFFICIENT OUTSIDE AIR.

1945 REQUIREMENT PROVIDE AT LEAST 14 SQUARE INCHES OF OUTSIDE FRESH AIR FOR COMBUSTION.

SUBMIT CANCEL DELETE

1950 1955 1960

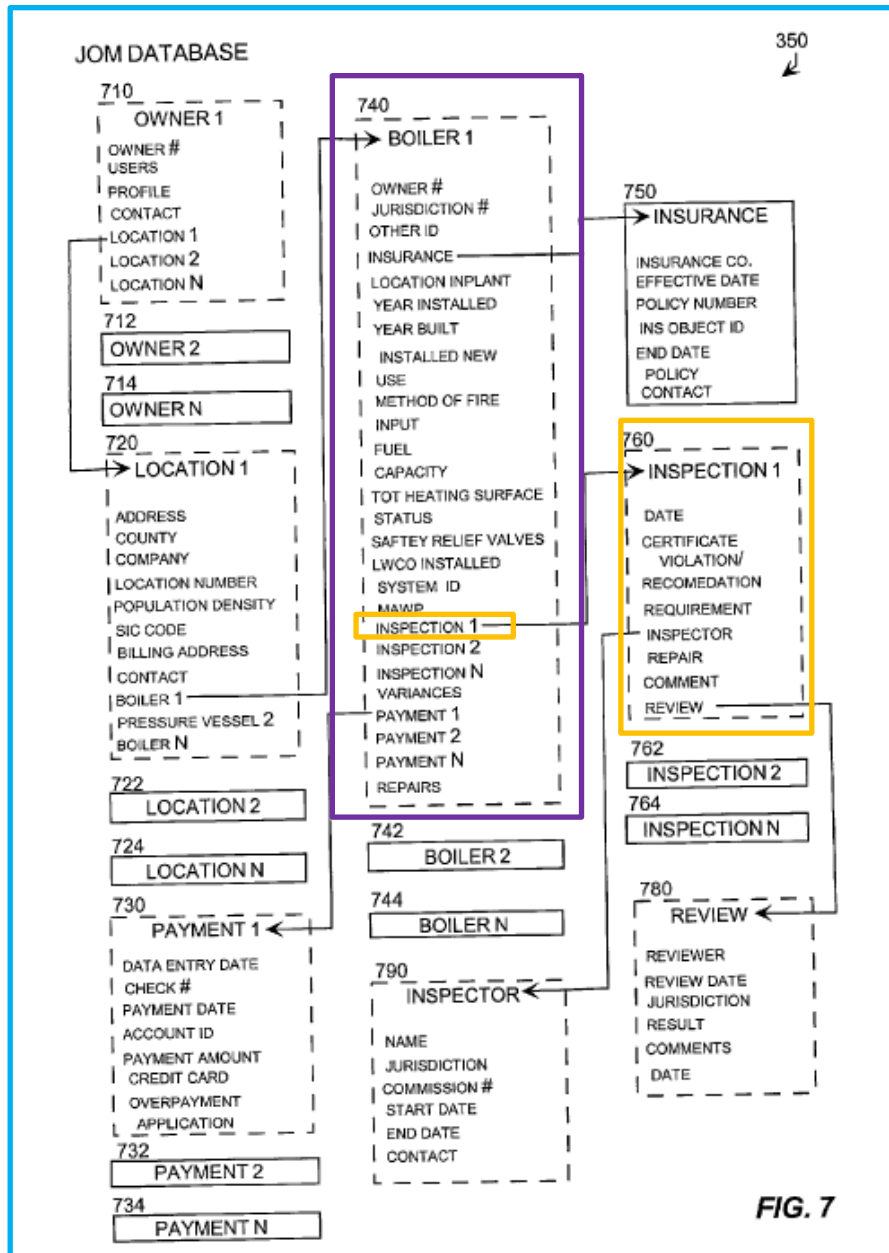
FIG. 19

[8h] “storing in a database in association with the asset, the inspection information, wherein the inspection information is accessible to the users, and updating the database in association with the asset based upon the inspection information;”

226. In my opinion, Key discloses, or it would have been obvious to a POSITA include as part of Key, limitation [8h].

227. I have discussed Key’s database above, including in Section X.A (summarizing Key) and limitations [8a] and [8b].

228. In Figure 7, below, Key discloses “a data file structure of information stored in the JOM **database 350**” which information “is organized logically in conventional data files in the known manner.” Ex. 1005 at [0104]. According to Key, “[o]bject inspections and associated information are stored in the inspection files,” for example, “**INSPECTION 1 760** illustrates the information stored in an inspection file” including “the inspection date, comments, violations and recommendations, and certificate information” associated with Boiler 1 as part of **object file 740**. Ex. 1005 at [0108]-[0110].



229. According to Key, “data stored in the database is not overwritten upon the storage of edit information” but instead “new information is appended to the existing information.” Ex. 1005 at [0114]. The “new information” includes the inspection information for the asset being inspected that is entered via the web interface. Ex. 1005 at [0088]-[0089], [0048], [0070]. As I discussed in limitations

[8a], [8b], and [8f], this information is accessible to the users (including owners, inspectors and jurisdictional reviewers). *See also* Ex. 1005 at [0115]-[0123] (discussing users being granted access if authorized after entering username and password).

[8i] “transmitting to the approval authority, a standard format compliance report including noting compliance, wherein the compliance report includes, noting deficiencies in the asset and storing the noted deficiencies in association with the asset.”

230. In my opinion, Key discloses, or it would have been obvious to a POSITA include as part of Key, limitation [8i].

231. Key discloses that “[a]fter receiving the inspection result data from the inspection, the inspection data is stored in the system database,” “[t]he inspection result data is then **provided to** the controlling jurisdiction,” and “[t]he controlling jurisdiction reviews the result data online and any review result data is stored in the system database.” Ex. 1005 at [0019] (emphasis added), Abstract, [0077], [0091], claims 1, 11, 21. In Key, the inspection result data may note compliance and/or include “a violation” or “a recommendation,” which may be “certificate blocking” (that is, noted deficiencies in the asset). Ex. 1005 at [0020], [0052]-[0055], [0110], FIG. 2, FIG. 7 (item 760 INSPECTION 1 noting violation stored in JOM database 350). According to Key, “[v]iolations must be rectified before the jurisdiction will allow the object to be placed into service.” Ex. 1005 at [0053].

232. Key further discloses that each jurisdiction (regulatory entity) “set[s] the safety requirements and govern[s] the issuance of certificates of compliance,” “requires the inspection information **in its format** utilizing its categories and domains,” and “evaluate[s] each inspection, repair, and other data to ensure compliance with the jurisdiction’s requirements.” Ex. 1005 at [0048] (emphasis added). Key also discloses that “the JOM **stores the inspection report in connection with the object**” (step 590 of Figure 5) and “schedules the inspection **to be reviewed by the jurisdiction**” (step 595 of Figure 5). Ex. 1005 at [0091], [0196] (emphasis added), FIG. 21.

233. As discussed above in limitations [8a], [8c], and [8e], Key also discloses that “web servers 320 also are operative to provide notifications in a known manner usually via email” and that “application software [of application servers 330] ... contains the necessary logic necessary to ... provide the associated updates and any notifications.” Ex. 1005 at [0067]-[0068]. Also as discussed, Key discloses that “notification system 414 is operative to send communications to users of the JOM 110” such as by email, facsimile, etc. Ex. 1005 at [0071].

234. A POSITA would have understood and found logical that such notifications sent to “users of the JOM 110” via email include the standard format compliance reports noting compliance including any deficiencies. In fact, as I discussed in limitations [8c] and 8[e], the “users of the JOM 110” include the

jurisdictions (namely, the approval authorities). I further note that this understanding is confirmed by Key's disclosure that the "[t]he inspection result data is then **provided to** the controlling jurisdiction." Ex. 1005 at [0019] (emphasis added), Abstract. It is also confirmed by Key's disclosure that "the JOM schedules the inspection **to be reviewed by the jurisdiction**" and "generates and places a task in the jurisdiction task listing," indicating to a POSA that the inspection report is provided (transmitted for viewing) to the jurisdiction reviewer. Ex. 1005 at [0091]. Moreover, a POSITA would logically have understood that expressly providing/sending standard reports to an approval authority reduces the efforts and costs needed for such authority to monitor the system to ensure compliance, issue certificates, block certificates, etc. (*e.g.*, the authority could passively, rather than actively, monitor compliance) and that various means were known (including web-based, email, etc. as disclosed in Key)—consistent with Key's stated goals that its "system provides an efficient, centralized, and web enabled process for the transfer of data between multiple jurisdictions and multiple entities required to routinely interact with the multiple jurisdictions" and "provides a cost-effective system for the performance and jurisdictional review...." and the state of the art. Ex. 1005 at [0015], [0043]; Ex. 1007 at 17:23-27 (disclosing "publication of reports in a format that would be accepted by, for example, a local fire inspection jurisdiction"), 2:11-16 ("...provide an authenticated report or the like in a compliant format for the

jurisdiction where the facility is located”); FIGs. 11A, 11B, 11C, 11D; Ex. 1020 at [0032] (disclosing “generating a report for the regulatory body related to compliance with the scheduled inspection and timely repairs for each of the environmental equipment systems”), Ex. 1021 at 8:5-24 (disclosing an “operational criteria compliance verification report” that “is preferably a code compliance verification report based on fire/life safety codes and associated industry standards” which report can be “forward[ed] ... to one or more predetermined entities”), 21:23-60.

235. Accordingly, for the reasons I have discussed above, a POSITA would have understood that the inspection data of the asset in the required standard jurisdictional format, including compliance and any violations or recommendations (*e.g.*, the disclosed inspection report) which are stored in the database and provided to the authority for review, corresponds to the claimed “transmitting to the approval authority, a standard format compliance report including noting compliance, wherein the compliance report includes, noting deficiencies in the asset and storing the noted deficiencies in association with the asset.”

2. Claim 9

“The method of claim 8, wherein the storing further includes: storing, in association with the asset a new deadline date, based upon completion of the inspection.”

236. In my opinion, Key discloses, or it would have been obvious to a POSITA include as part of Key, the limitation of claim 9. And, the combination of Key, Chauhan, Sweeney, and McKinney renders obvious claim 9 for the same reason as claim 8. This claim is effectively just repeating portions of the process, which is understood when an asset needs to be periodically inspected (and, in fact, is expressly disclosed in Key).

237. Key discloses that after the initial process is completed and assuming that asset is not decommissioned, that “the [inspection] process is repeated,” which process includes scheduling an inspection, and “the review process is repeated,” which process includes “updat[ing] the inspection date” which “is used by the JOM to calculate the next required inspection” (that is, when the next inspection deadline is calculated after the previous one is completed). Ex. 1005 at [0092], [0098], [0099], FIGs. 5, 6, [0020], [0063], [0103], claims 9, 24.

238. A POSITA would have understood that this updating would logically include storing of that information for use by the JOM system, and, as discussed in limitations [8b] and [8h], Key discloses storing the relevant information—such as inspection details including deadlines for the various assets—in its database. *See*

also Ex. 1005 at [0020], [0045], [0061], [0069], [0074], [0076], [0087], [0104]-[0105], [0110], FIG. 7.

3. Claim 10

“The method of claim 9 further comprising: receiving bids to perform a suitably compliant inspection of the asset from a group of qualified inspectors including, at least, the inspector; and presenting to the owner a compilation of the bids for selection of the inspector.”

239. In my opinion, Key and Sweeney disclose, or it would have been obvious to a POSITA include as part of Key, the limitations of claim 10. And, the combination of Key, Chauhan, Sweeney, and McKinney renders obvious claim 10 for the same reason as claim 8.

240. As I discussed in limitation [8f], Key alone or with Sweeney and/or McKinney discloses or renders obvious the selection of a qualified inspector, including the particularly selected inspector, and Sweeney discloses a bid selection process whereby multiple contractors submit bids that are presented to the asset owner which then selects a winning bid. For example, as to the bid-selection process, as I explained in limitation [8f], Sweeney discloses an “online bid submission form ... provided to a plurality of contractors for use in submitting bids” and that “[t]he asset owner can be provided with online access to the submitted bids ... in order to select[] a winning bid from the submitted bids,” that is, the owner selects the contractor from a compiled list (in Key’s JOM, it is the

qualified inspector to perform the compliance inspection that is selected). Ex. 1006 at [0043]-[0044], FIG. 1. Indeed, the selection process in Sweeney would logically apply to any worker/service personnel that is to be scheduled to perform a service, consistent with the teachings in Sweeney, Key and the state of the art.

4. Claim 11

“The method of claim 10 further comprising: based upon the owner selecting the inspector, scheduling the inspector’s inspection of the asset based upon the impending deadline, the inspector’s availability, and the asset availability.”

241. In my opinion, Key and Sweeney disclose, or it would have been obvious to a POSITA include as part of Key, the limitation of claim 11. And, the combination of Key, Chauhan, Sweeney, and McKinney renders obvious claim 11 for the same reason as claim 8. This claim is effectively just performing typical scheduling based on relevant availability and deadlines.

242. Key discloses “determining an inspection due date” and “scheduling an object inspection.” Ex. 1005 at claim 24, [0020], [0045], [0055]. Key further discloses that the “work assignment unit automatically schedules inspection for objects with upcoming inspection due dates.” Ex. 1005 at [0076], [0080], [0083]-[0084]. Key also discloses scheduling of “new work assignments,” which a POSA would have understood to be based on relevant availability (*e.g.*, inspector and asset). Ex. 1005 at [0134]-[0135]. In other words, it makes no sense to schedule an

inspection if one or both the inspector and the asset are not available to be inspected.

243. Sweeney further discloses that contractor-submitted bids (inspectors, as applied to Key) include various information including contractor availability, etc. Ex. 1006 at [0014], [0051]; Ex. 1020, [0082]-[0084] (customizing scheduling based on various parameters and availability). When the winning bid is chosen, the work to be performed is scheduled prior to the deadline (to ensure compliance) and when the inspector and asset are available (to ensure that the work can actually be performed, *e.g.*, if access to the asset is only available at certain times of day or certain days of the week).

5. Claim 12

“The method of claim 8 wherein the compiling the report includes: receiving, from the inspector, photographs of the asset or components of the asset; and storing the photographs in association with the asset and the date of the inspection.”

244. In my opinion, Key and Sweeney disclose, or it would have been obvious to a POSITA include as part of Key, the limitations of claim 12. And, the combination of Key, Chauhan, Sweeney, and McKinney renders obvious claim 12 for the same reason as claim 8.

245. Sweeney discloses that the “inspection report” from the inspector may include various including, including “**photographs** of the construction asset” along with other relevant information that are stored as part of the inspection report for

the asset in the database (for example, as shown in Figure 2, below). Ex. 1006, Abstract, [0008], [0034]-[0036].

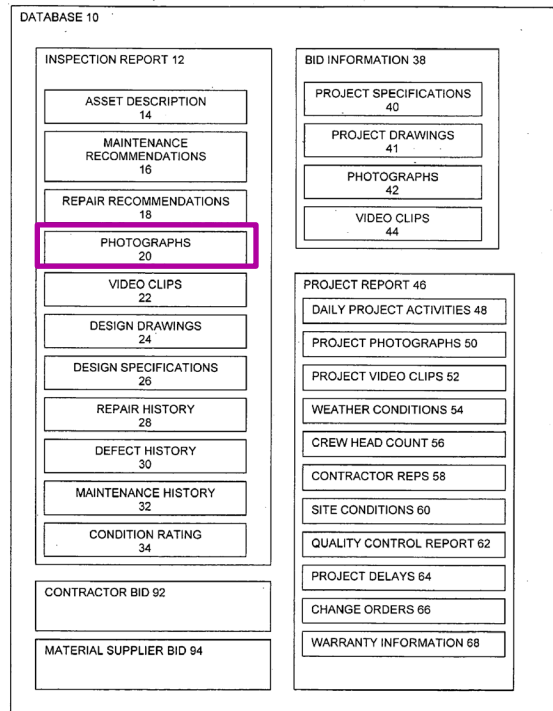


FIG. 2

246. As discussed in limitations [8b] and [8h], Key discloses storing relevant information in association with the object inspection in its database as part of **object 740** including, *e.g.*, **inspection date**, comments, recommendations, etc. in **inspection 1 760** (in Figure 7 below). Ex. 1005 at [0104]-[0105]. One logical example of relevant information to include in the inspection report are visual depictions (photos, video, etc. as in Sweeney) to aid in subsequent jurisdictional review and understanding of the inspection (*e.g.*, to illustrate deficiencies, compliance, allow a reviewer to remotely confirm that a repair was properly made,

etc.). Ex. 1006 at [0034] (before/after photos provide visual history of repairs); Ex. 1005 at [0108] (“object repair information is associated with each object”), [0178] (“Inspections, repairs, and some edits of object information require jurisdictional reviews.”).

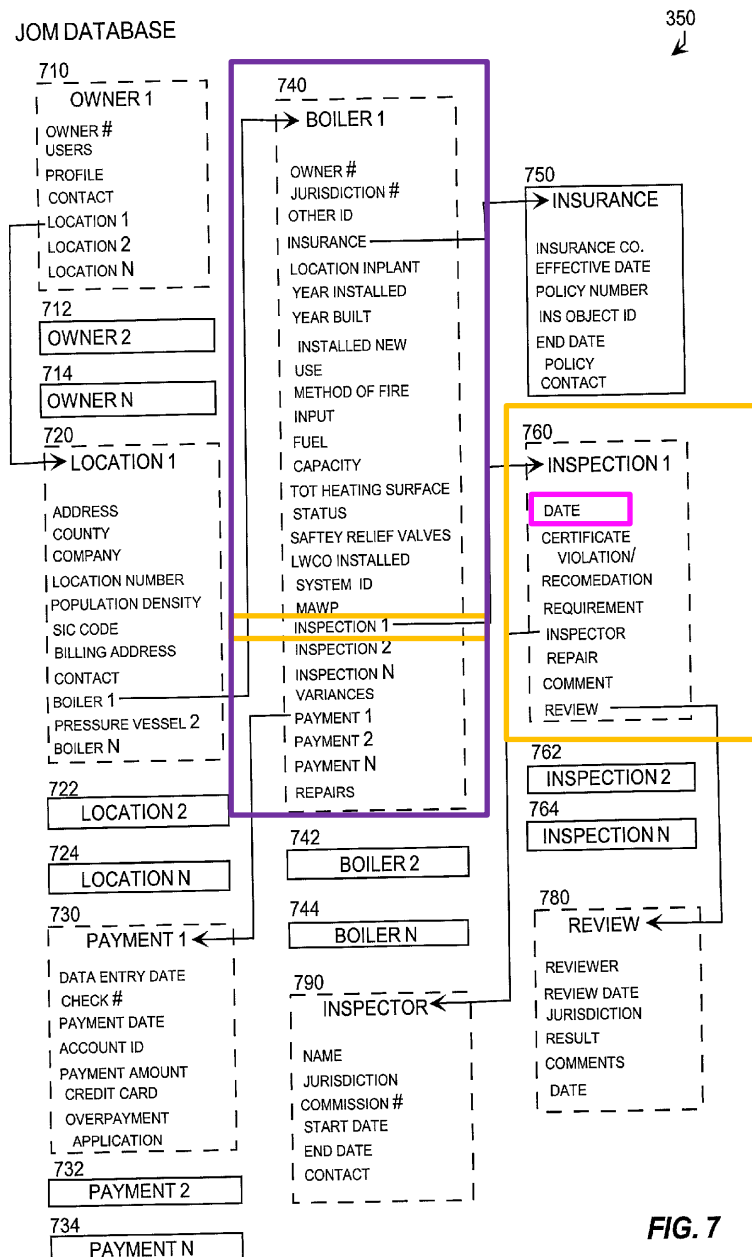


FIG. 7

6. Claim 13

“The method of claim 8 wherein the noting the deficiencies further comprises: selecting a remedy deficiency deadline based upon the noted deficiency and the date of the inspection; and storing in association with the asset a remedy deficiency deadline.”

247. In my opinion, Key discloses, or it would have been obvious to a POSITA include as part of Key, the limitations of claim 13. And, the combination of Key, Chauhan, Sweeney, and McKinney renders obvious claim 13 for the same reason as claim 8.

248. As I discussed in limitation [8i], Key discloses that its inspection reports include noting violations and recommendations and that violations may block a certificate from issuance. Key also discloses that “[v]iolations must be rectified before the jurisdiction will allow the object to be placed into service” and that repairs are arranged to be done by an “authorized repairer” to make the object compliant, which a POSITA would have understood needed to be done within the compliance deadline (or logically, within a specified period to perform an action such as a repair as was common in the field, which could depend on the particular problem identified or action to be taken). Ex. 1005 at [0053], [0191]; Ex. 1007 at 9:37-40; Ex. 1017 at [0034]; Ex. 1019 at [0062], [0081], claims 8, 15, 18; Ex. 1025 at [0109], [0147]. This information would be stored with the asset along with the other information, as discussed above regarding Figure 7 of Key.

7. Claim 14

“The method of claim 13 further comprising receiving bids to perform a suitably compliant remedy of the deficiency from a group of qualified contractors; and presenting to the owner a compilation of the bids for selection of a contractor to remedy the deficiency.”

249. In my opinion, Key and Sweeney disclose, or it would have been obvious to a POSITA include as part of Key, the limitations of claim 14. And, the combination of Key, Chauhan, Sweeney, and McKinney renders obvious claim 14 for the same reason as claim 8. Claim 14 is like claim 10, except claim 14 is applied contractors to remedy a deficiency instead of inspectors to perform an inspection.

250. As I discussed in limitation [8f] and claim 10, Sweeney discloses a bid selection process whereby multiple qualified contractors submit bids that are presented to the asset owner which then selects a winning bid. For example, as to the bid-selection process, as I explained, Sweeney discloses an “online bid submission form ... provided to a plurality of contractors for use in submitting bids” and that “[t]he asset owner can be provided with online access to the submitted bids ... in order to select[] a winning bid from the submitted bids,” that is, the owner selects the contractor (in Key’s JOM, the contractor performs the repair to remedy the deficiency). Ex. 1006 at [0043]-[0044], FIG. 1.

251. Sweeney further includes that the bid submissions include contractor qualifications, among other things (similar to Key, McKinney and other that demonstrate the knowledge a POSA that a qualified service person—whether inspector, contractor, etc.—are advantageously used). Ex. 1006 at cl. 25, [0014]; Ex. 1005 at [0053] (“authorized repairer makes the necessary changes to bring the object within specifications”).

8. Claim 15

“The method of claim 14 further comprising: based upon the owner selecting the contractor, scheduling the contractor to remedy the deficiency based upon the remedy deficiency deadline, the contractor’s availability, and the asset availability.”

252. In my opinion, Key and Sweeney disclose, or it would have been obvious to a POSITA include as part of Key, the limitation of claim 15. And, the combination of Key, Chauhan, Sweeney, and McKinney renders obvious claim 15 for the same reason as claim 8. This claim is effectively just performing typical scheduling based on relevant availability and deadlines and is just like claim 11 except it is applied to contract scheduling and disclosed by the combination for the same reasons as claim 11.

253. Key discloses “determining an inspection due date” and “scheduling an object inspection.” Ex. 1005 at claim 24, [0020], [0045], [0055]. Key further discloses that the “work assignment unit automatically schedules inspection for objects with upcoming inspection due dates.” Ex. 1005 at [0076], [0080], [0083]-

[0084]. Key also discloses scheduling of “new work assignments,” which a POSA would have understood to be based on relevant availability (*e.g.*, inspector and asset). Ex. 1005 at [0134]-[0135]. In other words, it makes no sense to schedule an inspection if both the inspector and the asset are not available to be inspected (or similarly, when the contractor is not available to do the work).

254. Sweeney further discloses that contractor-submitted bids includes various information including contractor availability, etc. Ex. 1006 at [0014], [0051]; Ex. 1020, [0082]-[0084] (customizing scheduling based on various parameters and availability). When the winning bid is chosen, the work to be performed is scheduled prior to the deadline (to ensure compliance) and when the contractor and asset are available (to ensure that the work can actually be performed, *e.g.*, if access to the asset is only available at certain times of day or certain days of the week).

9. Claim 16

“The method of claim 8 further comprising: compiling compliance report including the noted deficiency.”

255. Key discloses, or it would have been obvious to include as part of Key, the step of claim 16 for the same reasons as claim 8, step [8i]. To the extent it requires a compilation compliance report from multiple inspections, it is likewise disclosed by Key. Ex. 1005 at [0152], [0176]. In effect, this claim would amount to nothing more than a summary report, and providing such a report would be

consistent with the goals of Key and as known in the prior art, to make a more efficient, streamlined process, which would result in the assets with “violations” more easily being seen in a composite summary form (*e.g.*, a routine compliance report that allows a user, such as the jurisdiction, to easily view and understand the status of compliance and inspections including violations for regulated assets). Ex. 1005 at [0152], [0176]; Ex. 1031 at [0045], [0051]-[0052], [0059]; Ex. 1032 at [0110], [0127]; Ex. 1033 at [0005], [0059], [0067], claims 12, 21, 30, FIG. 11.

256. And, the combination of Key, Chauhan, Sweeney, and McKinney renders obvious claim 16 for the same reason as claim 8.

XII. CONCLUDING STATEMENTS

257. In signing this declaration, I understand that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I acknowledge that I may be subject to cross-examination in the case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

258. I declare that all statements made herein of my knowledge are true and correct. I also declare that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 35 U.S.C. § 1001.

259. I declare under the penalty of perjury that the foregoing is true and correct.

Executed on July 26, 2023

Richard MacInnes

Richard MacInnes