

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BRYCER, LLC, and BRYCER MANAGEMENT, INC.
Petitioner,

v.

TEGRIS, INC.,
Patent Owner.

IPR2023-01196
Patent 11,126,966 B2

Before HUBERT C. LORIN, MEREDITH C. PETRAVICK, and
BRENT M. DOUGAL, *Administrative Patent Judges*.

LORIN, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
Denying Patent Owner's Motion to Exclude
35 U.S.C. § 318(a)

I. INTRODUCTION

This is a Final Written Decision in an *inter partes* review challenging the patentability of claims 8–16 of U.S. Patent No. 11,126,966 B2 (Ex. 1001, “the ’966 patent”). We have jurisdiction under 35 U.S.C. § 6.

Petitioner has the burden of proving unpatentability of a claim by a preponderance of the evidence. 35 U.S.C. § 316(e). Having reviewed the arguments of the parties and the supporting evidence, we find that Petitioner has demonstrated by a preponderance of the evidence that claims 8–16 are unpatentable.

A. Background

Brycer, LLC and Brycer Management, Inc. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 8–16 of the ’966 patent. Tegriss Inc. (“Patent Owner”) filed a Preliminary Response (Paper 8, “Prelim. Resp.”).

After institution (Paper 9, “DI”), Patent Owner filed a Patent Owner Response (Paper 17, “PO Resp.”); Petitioner filed a Reply (Paper 26, “Pet. Reply”); and Patent Owner filed a Sur-reply (Paper 30, “PO Sur-reply”).

On October 24, 2024, the parties presented arguments at oral hearing, the transcript of which is of record. Paper 45 (“Tr.”).

After the hearing, we issued an Order pursuant to 37 C.F.R. ¶ 42.5 (Paper 42, “Order”). Petitioner filed a Petitioner’s “Brief in Response to Board’s Order (Paper 42) on Application of Printed Matter Doctrine” (Paper 43, “Pet. Printed Matter Brief”) and Patent Owner filed a “Patent Owner’s Brief Regarding Printed Matter Doctrine” (Paper 44, “PO Printed Matter Brief”).

B. Related Proceedings

Petitioner indicates, and Patent Owner agrees, that the '966 patent was asserted in *Tegris, Inc. v. Brycer, LLC*, Case No. 6:22-cv-5741 (N.D. Ill. 2022); however, that case was dismissed by Patent Owner and the '966 patent was again asserted in *Tegris, Inc. v. Brycer, LLC*, Case No. 1:23-cv-07744 (N.D. Ill. 2023) (“district court action”). Pet. 2, Paper 6, 1 (Petitioner’s Updated Mandatory Notice); PO Resp. 14, Paper 4, 2 (PO’s Updated Mandatory Notice), 2.

Also, Patent Owner notifies us that there are two pending U.S. continuation patent applications, Appl. No. 17/405,909 and Appl. No. 17/942,876, that each claim priority to the '966 patent. Paper 7, 2.

C. The '966 patent (Ex. 1001)

1. Disclosure

The '966 patent, titled “Systems and Methods for a Web Based Inspection Compliance Registry and Communication Tool,” relates to using a web registry to track the inspection compliance of an owned asset. Ex. 1001, code (54), 3:8–11.

The '966 patent explains that there are “assets that are owned around the world that require compliance with a code, local rule, state law, or federal law.” Ex. 1001, 1:19–22. The '966 patent uses as “a non limiting example, a fire hydrant” “as an owned asset throughout the specification.” *Id.* at 1:34–38. According to the '966 patent, “the hydrant is preferably inspected annually.” *Id.* at 1:39–41. “An inspector will record information about the hydrant[']s location and operability.” *Id.* at 1:43–45.

“Computer software has been used in the past as a way for inspecting

authorities to track fire hydrant usage.” Ex. 1001, 1:59–60. However, the ’966 patent explains that the “disadvantage of using current fire hydrant management software is the limitation of communication within the department and interdepartmentally.” *Id.* at 2:17–19. The ’966 patent further explains that “[c]urrently there is not a standard format for collecting fire hydrant information” and “the information would not likely integrate well using current software and inspection methods.” *Id.* at 2:34–37. Many prior approaches to keeping records, according to the ’966 patent, “affect[s] the local businesses[’] and residence’s fire insurance premiums.” *Id.* at 2:60–63.

Accordingly, “[a]llowing an accessible format to independent contractors would allow cheaper maintenance costs and saves [sic] the department and taxpayer’s money.” Ex. 1001, 3:1–4.

To that end, the ’966 patent discloses “a web registry to track the inspection compliance of an owned asset.” Ex. 1001, 3:8–11. In one example, a fire marshal “will receive weekly or monthly updates of all due and overdue inspections,” and “use the registry to communicate to the owner his intention to enforce the inspection.” *Id.* at 4:21–34. “The owner will use the registry to find qualified inspection companies.” *Id.* at 4:34–36. An inspection company “will also use the registry (via the web or mobile device) to input their inspections with or without deficiency information.” *Id.* at 4:37–41.

Figure 2 of the '966 patent is reproduced below.

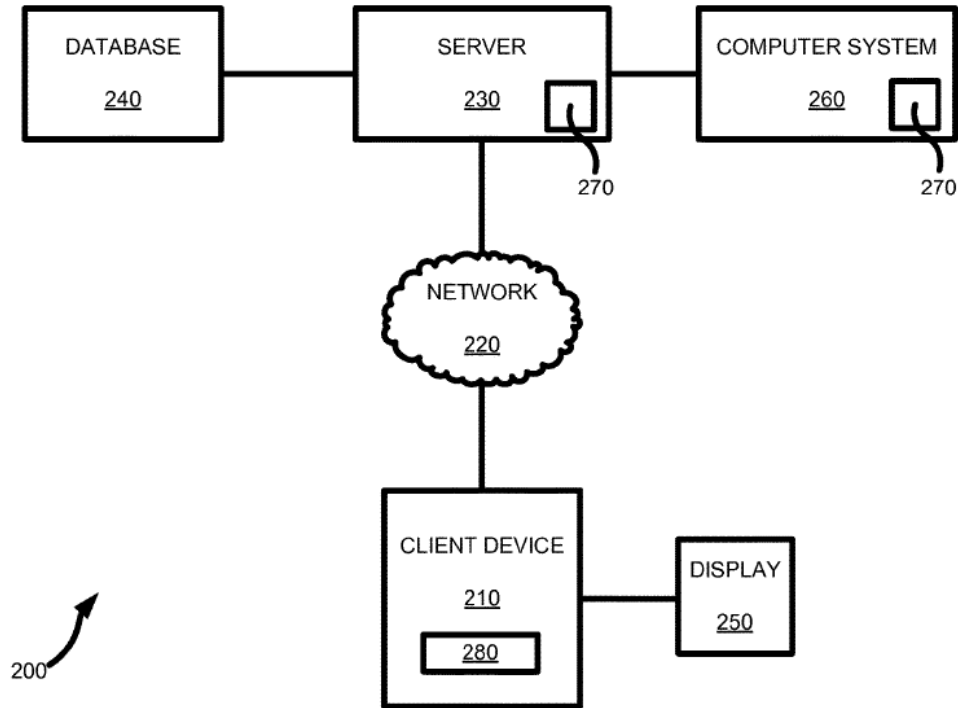


Fig. 2

Figure 2 of the '966 patent illustrates an exemplary computer network system (200). Ex. 1001, 3:34–36.

Figure 2 shows an electronic client device (210) is linked via a network (220) to a server (230). Ex. 1001, 6:21–29. The server (230) is coupled to a database (240) and a computer system (260). *Id.* A user of the client device (210) may “use a web based compliance registry on a browser application running on the client device to access web content served by the server 230.” *Id.* at 6:53–57. The server (230) is coupled to a database, and may “retrieve information there from and to store information thereto.” *Id.* at 6:44–49.

Figure 5, reproduced below, shows a method for using a web enabled inspection registry. Ex. 1001, 8:15–16.

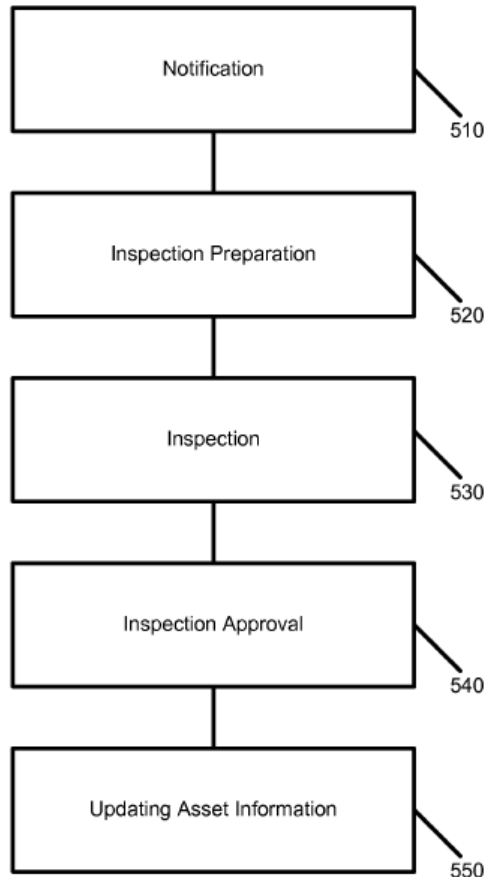


Fig. 5

Figure 5 of the '966 patent shows blocks 510 through 550 for using a web enabled inspection registry. Ex. 1001, 8:15–16.

At block 510 of Figure 5, “an owner/inspecting authority is notified that an inspection is needed on an owned asset.” Ex. 1001, 8:16–17. The owner is sent recommendations including “names of inspectors, types of inspection needed and general costs.” *Id.* at 8:26–31. At block 520, the owner may use the web based compliance registry to find a qualified inspector.” *Id.* at 8:42–44. “At block 530 an inspection takes place.” *Id.* at

8:54. The inspector enters inspection information and transmits “the inspection to a reviewing authority from the web based compliance registry.” *Id.* at 8:63–9:2. At blocks 540 and 550, the inspection is reviewed by an approving authority and “the information is updated on the system to reflect a completed and valid inspection.” *Id.* at 9:3–24.

2. Claims 8–16

Petitioner challenges claims 8–16. Pet. 3.

Claim 8, reproduced below, is the independent claim from which claims 9–16 directly or indirectly depend. Bracketing, consistent with the Petition, is added to assist in referring to the claim elements.

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:

[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

[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 template configured to describe the asset and [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.

Ex. 1001, 15:16-16:13.

D. Asserted References and Testimonial Evidence

Petitioner relies on the following references:

Name	Reference	Ex. No.
Key	U.S. Patent Application Publication No. 2002/0029222A1, published Mar. 7, 2002	1005
Sweeney	U.S. Patent Application Publication No. 2005/0021449A1, published Jan. 27, 2005	1006
Chauhan	W.O. International Publication No. 2004/104891A1, published Dec. 2, 2004	1016
McKinney	U.S. Patent Application Publication No. 2004/0230455A1, published Nov. 18, 2004	1020

Petitioner also relies on the Declaration of Richard MacInnes (Ex. 1003, MacInnes Decl.”) and Deposition transcripts of Leroy McNulty (Ex. 1037, “McNulty Dep.”), Michael A. Miller (Ex. 1038, “Miller Dep.”), Andrew Moren (Ex. 1039, “Moren Dep.”), and David H. Williams (Ex. 1040, “Williams Dep.”) as support for the various contentions.

Patent Owner relies on the Declarations of David H. Williams (Ex. 2001, “Prelim. Resp. Decl.”; Ex. 2020, “PO Resp. Decl.”), Andrew Moren (Ex. 2015, “Moren Decl.”), Leroy McNulty (Ex. 2016, “McNulty Decl.”), and Michael A. Miller (Ex. 2017, “Miller Decl.”), and Deposition transcript of Richard MacInnes (Ex. 2021, “MacInnes Dep.”) as support for the various contentions.

E. Overview of the Prior Art References

1. Key (Ex. 1005)

Key relates to “a jurisdiction online management system that manages required inspections mandated by a plurality of different jurisdictions

performed by non-governmental entities.” Ex. 1005 ¶ 2. Key describes a system that “provides an efficient, centralized, and web enabled process for the transfer of data between multiple jurisdictions and multiple entities.” *Id.* ¶ 15. “The system manages required inspections” and “is applicable to pressure vessels, boilers, elevators, amusement park rides, and other required jurisdictional inspections of objects.” *Id.*

Figure 1 of Key is reproduced below.

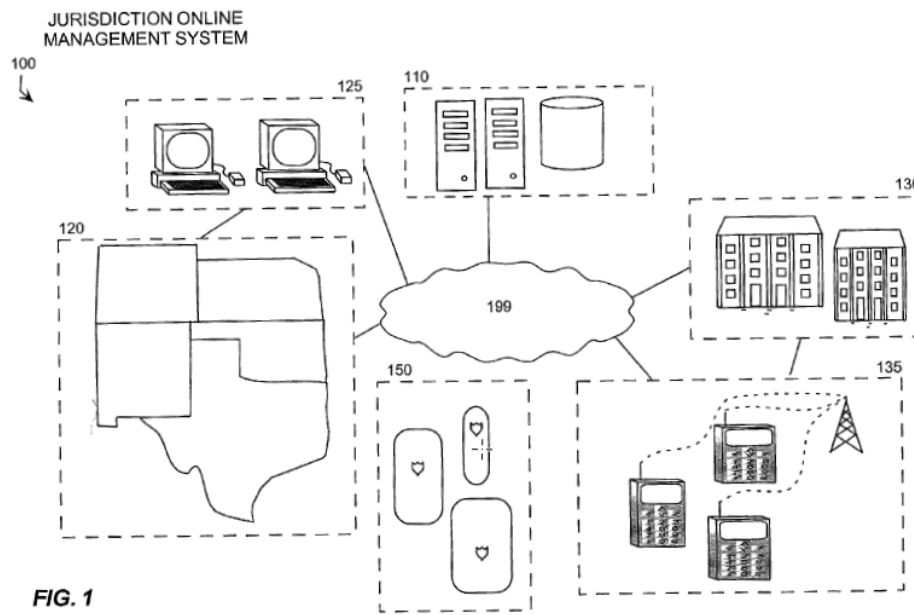


Figure 1 is a functional block diagram illustrating a jurisdiction online management system (100), including reviewers (125), regulatory entities (120), jurisdiction online manager [JOM] (110), objects (150), insurance companies (130), inspectors (135) all connected to the Internet (199). Ex. 1005 ¶¶ 44–48.

Key discloses that each regulatory entity (120) determines the required inspections and inspection frequencies. Ex. 1005 ¶ 47. Inspectors (135) “physically travel to the object’s location and perform the required inspections.” *Id.* ¶ 48. In one embodiment, an inspector (135) “can enter the inspection data directly on-line through the use of a portable computing

device.” *Id.* “Reviewers 125 at each jurisdiction 120 evaluate each inspection, repair, and other data to ensure compliance with the jurisdiction’s requirements.” *Id.* ¶ 47.

The jurisdiction online manager [JOM] 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.

Id. ¶ 45. A hardware architecture for the JOM is shown in the functional block diagram illustrated in Figure 3 of Key, reproduced below. *Id.* ¶ 23.

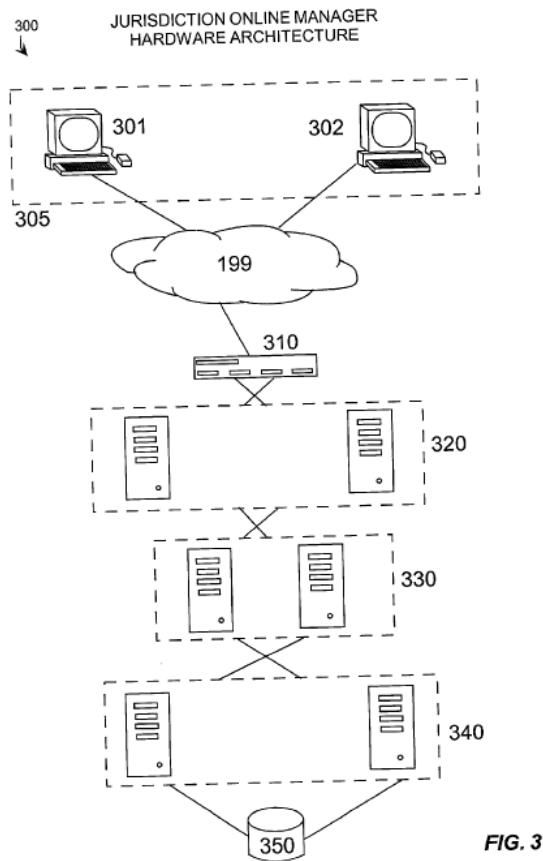


Figure 3 illustrates a hardware architecture of the JOM (110) that includes client computers (305), global computer network (199), web servers (320), and a database (350). Ex. 1005 ¶¶ 64–68.

2. Chauhan (Ex. 1016)

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 (GIS [“Geographical Information System”]) 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 ¶ 1.

Chauhan describes “an integrated GIS suite of applications that manages information across the entire utility,” referred to as UtilityCenter. Ex. 1016 ¶ 39. UtilityCenter stores data in a structured query language (SQL) database. *Id.* “The system architecture allows managers or administrators to temporarily assign permissions to work crews.” *Id.* ¶ 207. In one example, “a contractor hired to do fire hydrant inspections could be given a laptop with UtilityCenter loaded on it.” *Id.*

3. Sweeney (Ex. 1006)

Sweeney relates to “methods and systems for the online condition management of a construction asset.” Ex. 1006 ¶ 2. Sweeney discloses a computerized system for the online management of a construction asset which is shown via a block diagram in Figure 1, reproduced below.

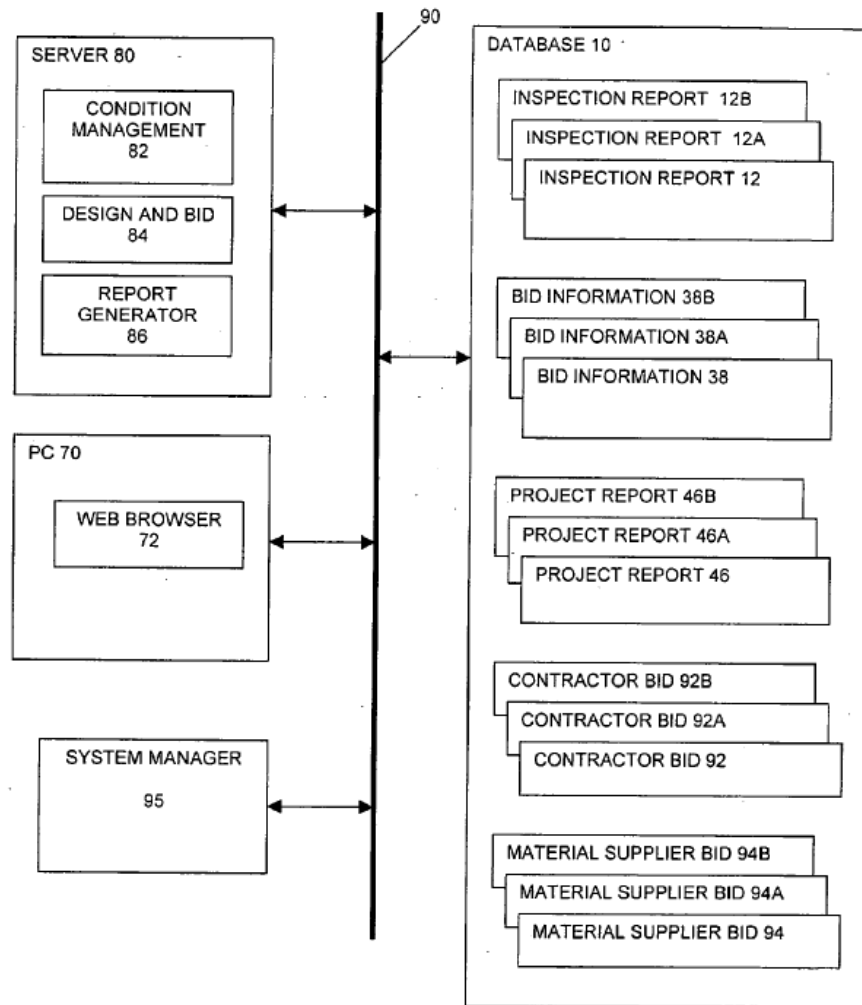


FIG. 1

Figure 1 of Sweeney shows a database (1), database (10), an online inspection report (12), server (80), web browser (72), and system manager (95). *See, e.g., Ex. 1006 ¶ 27.*

According to Sweeney, an asset owner is “provided with online access to the archived inspection report 12 via a web browser 72 running on a conventional personal computer 70.” *Ex. 1006 ¶ 27.* The asset owner may also be provided with “hyperlinks to the information shown in database 10.” *Id.* ¶ 39. For example, the asset owner may “view the inspection report 12 for the asset in question by clicking on a link provided on the web page for

that asset.” *Id.* ¶ 40. The server (80) may generate reports “in response to user queries from the web browser 72.” *Id.* ¶ 42. The reports may include information about an asset including the date of construction, repair history, location, and the like. *Id.*

4. McKinney (Ex. 1020)

McKinney relates to monitoring systems for servicing and verifying compliance of environmental equipment, such as wastewater treatment systems. Ex. 1020 ¶ 3. McKinney describes an interactive website where “service companies can enter a significant amount of data,” which may be used “by the service companies in the future for scheduling” future inspections. *Id.* ¶ 80. “The website may be used by companies to generate bills, renewal notices, service notices, and other comments or advisories to customers.” *Id.* The service company may also have preprinted forms mailed to a subscriber with “standardized warning letters to advise about regulations requiring renewal of the service contract.” *Id.*

F. Asserted Ground

Petitioner contends that claims 8–16 of the ’966 patent are unpatentable under the following ground:

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
I	8–16	§ 103 ¹	Key, Chauhan, Sweeney, McKinney

Pet. 3.

II. ANALYSIS

A. Principles of Law for Patentability

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, “would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the pertinent art; and (4) when in evidence, objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102 and 103. Because the challenged claims of the ’966 patent have an effective filing date before the effective date of the applicable AIA amendments, we refer to the pre-AIA version of 35 U.S.C. § 103 throughout this Decision.

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to Patent Owner. See *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

B. Level of Ordinary Skill in the Art

Petitioner contends that “a POSA [person of ordinary skill in the art] would have had at least a B.S. in engineering or a related field, and would have had at least two years of experience designing and/or developing asset management and compliance systems for a regulated asset or system of assets.” Pet. 6 (citing Ex. 1003 ¶¶ 16, 17, 27–29). Petitioner further contends “a higher education or skill level might make up for less experiences, and vice-versa.” *Id.* (citing Ex. 1003 ¶ 29).

Patent Owner finds that Petitioner’s “proposed POSA fails to consider the express scope of the Claims, which are limited to a method for ‘using a fire hydrant management software and web-based registry.’” PO Resp. 34. Patent Owner asserts that “[a] POSA should at minimum have knowledge of and experience in the inspection and maintenance of fire hydrants or at least similar emergency or life safety assets, applicable regulations, and software available for use in connection therewith in 2007.” *Id.* at 34–35 (citing Ex. 2020 ¶¶ 40–43); PO Sur-reply 12.

Petitioner disagrees, arguing, *inter alia*, that “PO’s proposal is inconsistent with the ’966 patent, which admits that fire hydrants and other assets are interchangeable and does not ascribe any significance to the asset type being managed.” Pet. Reply 7 (citing Ex. 1001, 1:19–38; Pet. 28; DI 18–19).

Patent Owner responds, *inter alia*, that it is “important to understand that ‘fire hydrant’ in the claim limitation ‘fire hydrant management software’ is functional, not merely descriptive.” PO Sur-reply 13. “[F]ire hydrants and related life safety assets are subject to unique codes and regulations that govern their inspection and maintenance, which is important to the obviousness analysis.” *Id.* at 12. In support, Patent Owner states that its Declarant, Mr. Williams, “explain[s] that asset management systems are not interchangeable, and that fire hydrants and related life safety assets would require different data and related structures.” *Id.* at 13 (citing Ex. 2020 ¶¶ 118–150). Patent Owner also cites Mr. Moren’s testimony who, according to Patent Owner, testifies, *inter alia*, that “regulatory requirements for fire hydrants and related life safety assets are necessary to ensure that they will work in an emergency; thus, they are treated differently than other assets.” *Id.* (citing Ex. 2015 ¶ 29).

Patent Owner’s asserted level of ordinary skill in the art is similar to the one proposed in its Preliminary Response, which was that “[a] POSA should at minimum have knowledge of and experience in the inspection and maintenance of fire hydrants or at least similar emergency or life safety assets and software available for use in connection therewith in 2007.” Prelim. Resp. 13 (citing Ex. 2001 ¶¶ 39–42). In the DI, we indicated that Patent Owner’s proposed definition requires a POSA to have “additional

knowledge and experience with fire hydrants.” DI 21. At that stage we declined to adopt Patent Owner’s proposed definition because it was predicated on Patent Owner’s construction of “fire hydrant” in the claim limitation “fire hydrant management software” as functionally limiting and there was “insufficient evidence to attribute a functional characteristic to the phrase ‘fire hydrant’ in the ‘fire hydrant management software’ limitation.” *Id.* at 20. “[T]he evidence weighs in favor of treating ‘fire hydrant’ as nonfunctional descriptive material for being directed to the content of the data the ‘management software’ processes.” *Id.* (citing MPEP § 2111.05; Ex. 1001, 8:4–14). We maintain that view.

Below we analyze Patent Owner’s position that “fire hydrant” is “functional, not merely descriptive.” PO Sur-reply 13; *infra* § II.C.4.b. As we explain, we are unpersuaded that the intrinsic record attributes a functional limitation to the phrase “fire hydrant.” *Infra* § II.C.4.b. As a result, we maintain our construction of “fire hydrant management software” as management software that processes *information about* fire hydrant assets. *Id.*; DI 18. Given this construction, it would be unnecessary for a POSA in the art pertinent to the claimed subject matter (i.e., management software that processes information about fire hydrant assets) to have additional knowledge and experience with fire hydrants.

Petitioner’s proposed definition for the level of skill in the art possessed by a POSA at the time the invention was made is more reasonable, and we adopt that definition for our analysis in this decision. It is from the viewpoint of a POSA with 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 that we assess the obviousness of the claimed subject matter.

Also, the level of ordinary skill in the pertinent art is adequately reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

C. Claim Construction

“[Claims] of a patent . . . shall be construed using the same claim construction standard that would be used to construe the [claims] in a civil action under 35 U.S.C. 282(b), including construing the [claims] in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100 (2023); *see also Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005).

Only those terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Petitioner does not submit constructions for any claim terms.

“Petitioner construes terms consistent with the understanding a POSA would have had at the time of the invention.” Pet. 9–10.

Patent Owner proposes constructions for:

1. [8b], [8c], [8d], and [8e], collectively (PO Resp. 25–26);
2. [8d] and [8e], collectively (*id.* at 26–28);
3. “notification event” (*id.* at 29–30); and,
4. “fire hydrant management software” (*id.* at 30–34).

We do not adopt any of Patent Owner’s proposed constructions.

We will also address a question we raised in the DI as to whether “fire hydrant” in the claim limitation “fire hydrant management software” should be characterized as nonfunctional descriptive material and to which the parties have responded. DI 18–20; Ex. 1001, 15:16–17; *see* PO Resp. 30–34; Pet. Reply 7; PO Sur-reply 10–11.

We will further address a question as to whether the content of the two notices recited in claim 8; that is, (a) “[a] notice [that] includes a standard format description of the type of inspection, and a cost associated with the type of inspection” and (b) “a standard format notice . . . of the status of the assets assigned to the approval authority,” should be characterized as printed matter, which we raised in an Order and to which the parties have responded. *See* Order (Paper 42); Pet. Printed Matter Brief (Paper 43); PO Printed Matter Brief (Paper 44).

1. [8b], [8c], [8d], and [8e], collectively

Patent Owner proposes that [8b], [8c], [8d], and [8e] “should collectively be construed to mean that notices are sent simultaneously to the owner and AHJ [“authority having jurisdiction”] regarding an upcoming ‘notification event,’ which is construed . . . as an upcoming inspection for a fire hydrant or other life safety asset.” PO Resp. 26.

Petitioner opposes because, *inter alia*, “[c]laim 8 is a method reciting several steps; there is no requirement to ‘simultaneously’ send or that both notices be tied to ‘an upcoming inspection.’” Pet. Reply 3.

Claim 8 calls for two different notices; in [8d] an “owner of an asset” is notified “of a notification event” via a notice and in [8e] a “standard format notice” is sent to an “approval authority.” Both of these notices are

based on [8c] whereby records of assets from a database are analyzed to identify notification events.

Based on a plain reading of claim 8, claim 8 does not call for the two notices to be sent simultaneously. The duration between sending a notice to the asset owner and another notice to the approval authority is unspecified. Claim 8 covers, for example, sending a notice to the approval authority *after* a notice is sent to the asset owner.

There is insufficient evidence that the '966 patent specification would have led a POSA to understand, when reading the claim in light of the specification, that the two notices are sent simultaneously.

Patent Owner directs our attention to discussion in the specification of Figure 5. PO Sur-reply 5–6 (citing Ex. 1001, 8:15–18, 29–31). In that discussion, referring to block 510 of Figure 5, the '966 patent explains “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.” Ex. 1001, 8:16–17.

By way of example [of an initial setup of the registry], 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.

Id. at 8:22–31. Referring to block 520 of Figure 5, the '966 patent explains that “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.” *Id.* at 8:38–41.

But there is no mention of simultaneously sending one notice to the asset owner and another to the approval authority. The passages cited by Patent Owner describe notifying the owner and “[t]he notification step is also used to alert the inspecting authority that an inspection is due.” Ex. 1001, 8:29–31. But the passage provides no insight into when the approval authority should be alerted at the time the asset owner is notified.

Neither the claim nor the specification places a limit on the duration between sending the first notice to the asset owner and the second notice to the approval authority.

Patent Owner appears further to argue that a POSA practicing [8b], [8c], [8d], and [8e], collectively, would necessarily send two notices simultaneously because they both concern an upcoming inspection deadline. PO Resp. 26; PO Sur-reply 5–6. As the apparent argument goes, since [8d] and [8e] are both based on the same analysis, i.e., [8c], that is, an analysis of the records of assets from a database “to identify notification events,” the two notices concern the same identified notification event (such as an impending inspection deadline) and would be sent to both the asset owner and approval authority simultaneously. *See, e.g.*, PO Sur-reply 5 (citing, *inter alia*, Ex. 2013). In support of this apparent argument, Patent Owner directs our attention to the deposition of Mr. MacInnes who, according to Patent Owner, acknowledges that “a POSA would understand that notices sent to the owner and AHJ are based on the same analysis of records in [8c] and would be sent out at the same time.” PO Resp. 26 (citing Ex. 2021, pp. 62–63); PO Sur-reply 6 (“Referring to [8d] and [8e], Mr. MacInnes agreed

that a POSA would understand that those notices are ‘essentially sent at the same time’.”). Patent Owner finds further support in the ’966 patent which, according to Patent Owner, “explains that at block 510 [of Fig. 5] an owner/inspection authority is notified that an inspection is needed on an owned asset.” PO Resp. 26 (citing Ex. 1001, 8:15–19); *see also* PO Sur-reply 6 (“the specification supports the construction that separate notices are sent, as part of the same step, to the asset owner and inspection authority regarding an upcoming inspection deadline”).

The difficulty with this apparent argument is that, as we have explained, the intrinsic evidence does not support limiting the scope of claim 8 such that the two notices are sent simultaneously, irrespective that a POSA *would* have done so. The intrinsic record supports a broader construction of claim 8.

We are unpersuaded that the intrinsic evidence requires a construction that limits [8b], [8c], [8d], and [8e], collectively, to simultaneously sending notices to the asset owner and approval authority as Patent Owner proposes. We will apply a plain and ordinary meaning to all the words in [8b], [8c], [8d], and [8e] which, collectively, does not require simultaneously sending notices to the asset owner and approval authority.

2. [8d] “notifying” and [8e] “notice”

Patent Owner proposes that [8d] “notifying” and [8e] “notice” “should be construed to mean automatically sending a message to the asset owner and AHJ.” PO Resp. 27–28 (citing Ex. 2020 ¶¶ 57–66).

Petitioner opposes because, *inter alia*, “[t]here is nothing in the specification or claims that limits the notification method (whether email or within the registry).” Pet. Reply 5.

Regarding [8d] “notifying,” Patent Owner correctly states that “[8d] recites ‘notifying the asset owner of a notification event.’ That step further recites that such notice includes information, such as, a standard format description of the type of inspection, and estimated cost thereof.” PO Resp. 26.

But [8d] does not require “sending” the notice. [8d] encompasses, for example, notifying the asset owner simply by posting the notice where the asset owner can see it. Patent Owner’s proposed construction of [8d] “notifying” to mean “automatically sending a message” is at odds with the wording of [8d] which does not require sending. To the extent Patent Owner is arguing that “notifying” means “automatically sending,” there is insufficient evidence based on the full trial record that patentee intended “notifying” to have that meaning. “To act as its own lexicographer, a patentee must ‘clearly set forth a definition of the disputed claim term,’ and ‘clearly express an intent to define the term.’” *GE Lighting Solutions, LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014) (quoting *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)).

By contrast, [8e] requires “sending” a standard format notice to the approval authority. Nevertheless, [8e] requires no more than merely “sending” the notice to the approval authority. [8e] is not attached to any device or particular way of delivering the notice to the approval authority. Based on a plain reading of the claim, claim 8 is not limited to “automatically” sending a message to the approval authority.

There is insufficient evidence that the '966 patent specification would have led a POSA to understand, when reading the claim in light of the specification, that the notice of [8e] (and that of [8d]) is sent “automatically.”

In support of their respective positions, both parties cite 4:24–36 of the '966 patent specification. PO Resp. 27; Pet. Reply 5. It states, in pertinent part, that “[a] year later, the property owner will receive notice (via email, physical mail, or other) that the fire sprinkler system is due for an annual inspection.” Ex. 1001, 4:27–29. We agree with Petitioner. This passage does not indicate that the notices are sent “automatically.”

Patent Owner appears to use the term “automatically” in the sense that the sending must be an “affirmative action” rather than “a passive action ([e.g.,] making information available via access to software or a database).” PO Resp. 28 (characterizing Petitioner’s construction of [8d] “notifying” and [8e] “notice” in its obviousness analysis as being “impermissibly broad[]” (citing Ex. 2021, pp. 102–104, 106); *cf.* PO Sur-reply 8 (“differentiat[ing] between proactively sending a notice, as opposed to [accessing]/using the web registry”). Patent Owner argues that “[n]either the ‘966 specification, nor the plain language of claim 8, support a construction of passive notice or notifying that includes merely placing information in a list or database that requires a user to login to a system to view it.” PO Resp. 28 (citing Ex. 2020 ¶¶ 59–66); 27 (relying on Ex. 1001, 4:24–36). We disagree.

The plain language of [8e] (or [8d]) does not exclude sending a “standard format notice” to an approval authority whereby the notice is sent to a database accessible by the approval authority by, for example, logging into a system to view it. The '966 specification (e.g., Ex. 1001, 4:24–36)

does not support a narrow scope for [8e] “sending a . . . notice” that excludes such a possibility. We agree with Petitioner that although the ’966 patent specification describes direct delivery means (e.g., email, physical mail) it also “describes ‘other’ unspecified means,” which leaves open the possibility of using indirect delivery means, such as, sending the notice to a database accessible to the approval authority. Pet. Reply 5 (relying on Ex. 1001, 4:28).

Patent Owner argues that the claim terms “send”/“notify” and “access” have different meanings. PO Sur-reply 7–9. We agree that different claim terms are presumed to have different meanings. *SimpleAir, Inc. v. Sony Ericsson Mobile Communications AB*, 820 F.3d 419, 431 (Fed. Cir. 2016). We agree that “information to be accessed is ‘stored’ not ‘sent’” (PO Sur-reply 8) and “merely adding information to a database” is not sending a notice (*id.* at 6).

That being said, Patent Owner’s proposed construction of [8e] “notice” would exclude from its scope any possibility of sending the notice to the approval authority unless it was sent directly to the approval authority without, for example, accessing a database. Neither a plain reading of [8e] nor the specification support such a narrow construction.

We are unpersuaded that the intrinsic evidence requires a construction limiting [8d] “notifying” and [8e] “notice” to automatically sending a message to the asset owner and approval authority as Patent Owner proposes. We will apply plain and ordinary meanings to [8d] “notifying” and [8e] “notice” which do not require automatically sending a message to the asset owner and approval authority.

3. [8c] “*notification events*”

Patent Owner contends that [8c] “notification events” “should be construed as ‘upcoming inspections for fire hydrants and related assets.’” PO Resp. 30.

Petitioner opposes because “PO does not assert lexicography or disclaimer for general ‘notification events.’ Nor does the claim limit [8c]’s ‘notification events’ to a particular event or require particular details about such event.” Pet. Reply 6. We agree with Petitioner.

[8c] calls for analyzing records of assets from a database to identify notification events. [8d] calls for notifying an owner of an asset of *a notification event* via a notice based on [8c]. [8d] further defines “a notification event” to “comprise[] a designatable interval in advance of an impending deadline for the inspection.” Thus, based on a plain reading of the claim, the [8c] “notification events” is broader than the [8d] “a notification.” Claim 8 does not limit the [8c] “notification events” to “upcoming inspections for fire hydrants and related assets” as Patent Owner proposes. Such a limitation only applies to the notice notifying the asset owner, i.e., [8d].

There is insufficient evidence that the ’966 patent specification would have led a POSA to understand, when reading the claim in light of the specification, that the [8c] “notification events” refers to “upcoming inspections for fire hydrants and related assets.”

Patent Owner would appear to disagree. Patent Owner explains that the ’966 patent describes managing a registry of owned assets, “more specifically fire hydrant inspections.” PO Resp. 29 (quoting Ex. 1001, 3:55–56). According to Patent Owner, the ’966 patent describes “the

stakeholders regarding the maintenance and inspection of fire hydrants, the difficulty in maintaining communications between them, and that the importance of properly maintaining such devices ‘may be the difference in the survival of personnel and total destruction of the burning building.’” *Id.* at 29–30 (quoting Ex. 1001, 3:58–4:8). “It then generally describes the compliance steps recited in claim 8 including steps to ‘take an owner of an asset from a notification that an inspection is needed, through bidding for an inspector, inspection, approval and payment and finally posting of the inspection in the registry.’” *Id.* at 30 (quoting Ex. 1001, 4:13–17.) “It also provides that the ‘registry further stores location information in order to allow a user with a global positioning system and access to the web-based registry to review the status of all of the hydrants in the general area.’” *Id.* (quoting Ex. 1001, 4:17–20.) Patent Owner also directs our attention to, *inter alia*, the preamble of claim 8, which, according to Patent Owner, “recites a method for using fire hydrant management software ‘to track requisite inspection of an owned asset.’” PO Sur-reply 9. Based on this intrinsic evidence, Patent Owner argues that “[i]n the context of the other elements of claim 8 and the ‘966 specification, ‘notification events’ in [8[c]] should be construed as ‘upcoming inspections for fire hydrants and related assets.’” PO Resp. 30.

We are unpersuaded. Although the claim and specification support construing “notification events” to encompass “upcoming inspections for fire hydrants and related assets,” they do not support limiting the scope of “notification events” to only “upcoming inspections for fire hydrants and related assets.” Nothing in the passages from the specification cited by Patent Owner or in the claim limits the “notification events” to “upcoming

inspections for fire hydrants and related assets,” except in the case when the asset owner is notified of “a notification event” ([8d]). Only in that case, is the notification required to “comprise[] a designatable interval in advance of an impending deadline for the inspection.”

We are unpersuaded that the intrinsic evidence requires a construction limiting [8c] “notification events” to “upcoming inspections for fire hydrants and related assets” as Patent Owner proposes. We will apply a plain and ordinary meaning to [8c] “notification events” which does not require them to be “upcoming inspections for fire hydrants and related assets.”

4. “fire hydrant management software”

a. Patent Owner’s Proposed Construction

1) Background

In its Preliminary Response, Patent Owner proposed that “fire hydrant management software” be construed as “[s]oftware that allows the user to input fire hydrant information, schedule maintenance and create reminders for service.” Prelim. Resp. 12–13 (citing Ex. 2001 ¶¶ 51–54; Ex. 1001, 1:63–66). Patent Owner cited, *inter alia*, Figure 5 and various passages of the ’966 patent and testimony of Mr. Williams as evidence in support of its view. *Id.* (discussing, *inter alia*, Ex. 1001, 8:15–38, 1:63–66, Fig. 5; Ex. 2001 ¶¶ 51–54).

We were unpersuaded by the evidence presented. DI 18–20. We did not adopt Patent Owner’s proposed construction of “fire hydrant management software” and instead

construe[d] “fire hydrant management software” as management software that processes information about fire hydrant assets. This comports with Petitioner’s implicit construction. *See*, e.g., Pet. 1 (“there is nothing novel or non-obvious about the claimed

methods of using *management software* and a registry to track asset inspections”) (emphasis added).

DI 18.

Patent Owner repeats its prior position in the Patent Owner Response. *See* PO Resp. 30–34. “The term ‘fire hydrant management software’, in view of claim 8 and the ‘966 specification by POSA, should be construed as: Software that allows the user to input fire hydrant information, schedule maintenance, and create reminders for service.” *Id.* at 30–31 (citing Ex. 2020 ¶¶ 54–56).

Petitioner disagrees. “Contrary to PO, the plain meaning of ‘fire hydrant management software’ bears no relationship to ‘schedule maintenance,’ ‘reminders’ or other such particulars.” Pet. Reply 7.

2) Discussion

The principal difficulty with Patent Owner’s proposed construction is that claim 8 does not call for the “fire hydrant management software” to schedule maintenance and create reminders for service.

“Fire hydrant management software” is recited in the preamble. The preamble states that, along with a web-based registry, it is used “to track requisite inspection of an owned asset.” In [8a], the “web-based registry is configured to run a fire hydrant management software.” In [8b], “a computer-based fire hydrant management software system” retrieves “real time records of assets from a database.” In [8d], “the owner of the asset, upon remotely accessing the fire hydrant management software compliance registry, may update and review the status of the assets.” In [8f], “upon logging on to a password controlled website configured to provide access to

the fire hydrant management software.” These are the only instances where the claimed method uses a fire hydrant management software.

Based on a plain reading of claim 8, we do not see the “fire hydrant management software” used to schedule maintenance and create reminders for service.

There is insufficient evidence that the ’966 patent specification would have led a POSA to understand, when reading the claim in light of the specification, that the “fire hydrant management software” is used to schedule maintenance and create reminders for service.

According Patent Owner, “Patent Owner’s proposed construction is essentially the same as the description of fire hydrant management software in the specification and is consistent with the plain language of claim 8.” PO Resp. 31 (citing Ex. 1001, 1:62–65, 15:16–18).

The sentence at 1:62–65 describes “[a] typical fire hydrant management software program” that “allows the user to input hydrant information, schedule maintenance, and create reminders for service.” Emphasis added. This does not support limiting “fire hydrant management software” to the “typical” embodiment described by that sentence. The sentence does not define “fire hydrant management software” as a system that includes scheduling maintenance and creating reminders for service but merely provides a typical example where they are included.

The citation 15:16–18 is to the preamble of claim 8 which makes no mention of scheduling maintenance and creating reminders for service.

Neither the claim nor the specification places a limit on the “fire hydrant management software” such that it must schedule maintenance and create reminders for service.

We are unpersuaded that the intrinsic evidence requires a construction that limits the scope of “fire hydrant management software” to “[s]oftware that allows the user to input fire hydrant information, schedule maintenance, and create reminders for service” as Patent Owner proposes. PO Resp. 31. We will apply a plain and ordinary meaning, which is management software that processes information about fire hydrant assets.

b. Functional/Nonfunctional Descriptive Material

1) Background

During the institution phase, the parties disputed whether the combination of Key, Chauhan, Sweeney, and McKinney taught or rendered obvious using a “fire hydrant management software” as claimed. The dispute stemmed from the parties’ differing views of the patentable significance of the phrase “fire hydrant” in describing the “management software.” DI 18.

Petitioner appeared to take the view that the phrase “fire hydrant” describes the content of the data that the software processes. *See, e.g.,* Pet. 28 (alteration in original):

A POSA would have understood that there was nothing new or inventive about the particular asset to be tracked, nor does the ’966 patent purport there is, instead noting—just like in Key and the other prior art discussed above—that a fire hydrant is a “***non[-]limiting*** example” and “it should be readily appreciated ***any owned asset may be substituted*** for the fire hydrant.” EX1001, 1:34–39; EX1003 ¶¶124–139.

Quoted at DI 18–19.

Patent Owner appeared to take the view that “fire hydrant” relates to a functional characteristic of the software. *See, e.g.,* Prelim. Resp 36 (contending, *inter alia*, that the “fire hydrant management software” is

“directed to a particular technology”). According to Patent Owner, “[t]he Challenged Claims relate to software capable of managing the substantially different needs and problems relating to fire hydrants.” *Id.* at 40 (citing Ex. 2001 ¶¶ 91–104). *See also id.* at 36 (the “fire hydrant management software” . . . [is] directed to a particular technology”), 38 (“the ‘966 Patent and Challenged Claims are directed at a much narrower technical field” [than the “the technical field of asset management, monitoring, and compliance” that Petitioner argues]) (citing Pet. 22); DI 19.

We evaluated the parties’ apparent views and determined that:

In our view, at this stage, there is insufficient evidence to attribute a functional characteristic to the phrase “fire hydrant” in the “fire hydrant management software” limitation. Rather, the evidence weighs in favor of treating “fire hydrant” as nonfunctional descriptive material for being directed to the content of the data the “management software” processes.

DI 20 (citing MPEP § 2111.05 Functional and Nonfunctional Descriptive Material (R-07.2022)). In effect, we disagreed with Patent Owner’s apparent view that “fire hydrant management software” is “directed to a particular technology.” Prelim. Resp. 36.

The parties’ differing apparent views of the patentable significance of the phrase “fire hydrant” in describing the “management software” has extended into the trial phase. It remains central to the dispute over whether the combination of Key, Chauhan, Sweeney, and McKinney teaches or renders obvious using a “fire hydrant management software” as claimed. *Cf., e.g.,* Pet. 28 (discussed above and at DI 18–19) and PO Resp. 46 (“Implicit in [Mr. MacInnes’s] assertion [that Key does not disclose a ‘fire hydrant’ or ‘fire hydrant management software’] are the incorrect

assumptions that: (1) applications are interchangeable for an asset management system, (2) different kinds of additional assets, like fire hydrants, can be merely plugged into an asset management system.”) (discussing Ex. 1003 ¶ 150). The present dispute is predicated on the same differing views of the patentable significance of the phrase “fire hydrant” that were taken during the institution phase. *See, e.g.*, PO Resp. 30–34; Pet. Reply 7; PO Sur-reply 10–11.

The question we must answer is whether the phrase “fire hydrant” in the claim limitation “fire hydrant management software” is or is not nonfunctional descriptive material, given the entire trial record. This is a matter of applying the printed matter doctrine.

Patent Owner argues that the printed matter cases have no factual relevance here for the same reason as in *In re Lowry*, 32 F.3d 1579 (Fed. Cir. 1994), quoting:

The printed matter cases have no factual relevance where “the invention as defined by the claims *requires* that the information be processed not by the mind but by a machine, the computer.” [citation omitted.] Lowry's data structures, which according to Lowry greatly facilitate data management by data processing systems, are processed by a machine. Indeed, they are not accessible other than through sophisticated software systems. The printed matter cases have no factual relevance here.

PO Resp. 31–32 (quoting *In re Lowry*, 32 F.3d at 1583–84) (alteration in original). We disagree.

In *Lowry* the claim at issue was directed to a “memory for storing data for access by an application program being executed on a data processing system” comprising, *inter alia*, a “data structure.” *In re Lowry*, 32 F.3d at 1581 (claim 1 of U.S. Application Serial No. 07/181,105). The Board had

determined (incorrectly according to the court) that “Lowry’s *data structures* were analogous to printed matter.” *Id.* at 1582 (emphasis added). Lowry was not “seek[ing] to patent the content of information resident in a database.” *Id.* at 1583.

By contrast, here, there is dispute over whether the combination of Key, Chauhan, Sweeney, and McKinney teaches or renders obvious using a “fire hydrant management software” and that dispute depends in part on whether “fire hydrant” is merely descriptive of content of the information being processed or a functional/structural limitation of the “management software.” The printed matter doctrine is implicated when we ask whether a limitation is nonfunctional descriptive material and, if so, whether it should be given patentable weight in the obviousness analysis.

“[P]rinted matter [is] matter claimed for what it communicates.” *In re Distefano*, 808 F.3d 845, 850 (Fed. Cir. 2015) (concerning a graphical user interface composed of a primary display screen and an overlaid design plate). “Claim limitations directed to printed matter are not entitled to patentable weight unless the printed matter is functionally related to the substrate on which the printed matter is applied.” *Praxair Distribution, Inc. v. Mallinckrodt Hospital Products IP Ltd.*, 890 F.3d 1024, 1031 (Fed. Cir. 2018)

If “fire hydrant” in “fire hydrant management software” is matter claimed for what it communicates, then “fire hydrant” would not be given patentable weight. *Cf. King Pharms., Inc. v. Eon Labs, Inc.*, 616 F.3d 1267, 1279 (Fed. Cir. 2010) (“The rationale behind this line of cases is preventing the indefinite patenting of known products by the simple inclusion of novel, yet functionally unrelated limitations”) (citing *In re Gulack*, 703 F.2d 1381

(Fed. Cir. 1983); *In re Miller*, 418 F.2d 1392 (CCPA 1969); and *In re Ngai*, 367 F.3d 1336 (Fed. Cir. 2004)).

If “fire hydrant” in “fire hydrant management software” is functionally/structurally related to the “management software,” then “fire hydrant” would be given patentable weight. *See Praxair*, 890 F.3d at 1031 (“[c]laim limitations directed to printed matter are not entitled to patentable weight unless the printed matter is functionally related to the substrate on which the printed matter is applied.”); *see also C.R. Bard Inc. v. AngioDynamics, Inc.*, 979 F.3d 1372, 1381 (Fed. Cir. 2020):

This court and its predecessor have long recognized that certain “printed matter” falls outside the scope of patentable subject matter under U.S. patent law. *See AstraZeneca LP v. Apotex, Inc.*, 633 F.3d 1042, 1064 (Fed. Cir. 2010) (“This court has generally found printed matter to fall outside the scope of § 101.”); *In re Chatfield*, 545 F.2d 152, 157 (CCPA 1976) (“Some inventions, however meritorious, do not constitute patentable subject matter, e.g., printed matter.”). While historically “printed matter” referred to claim elements that literally encompassed “printed” material, the doctrine has evolved over time to guard against attempts to monopolize *the conveyance of information using any medium*. *See Praxair*[, 890 F.3d at 1032]; . . . *Distefano*, 808 F.3d [at 849]. Today, printed matter encompasses any information claimed for its communicative content, and the doctrine prohibits patenting such printed matter unless it is “functionally related” to its “substrate,” which encompasses the structural elements of the claimed invention. *Praxair*, 890 F.3d at 1032; *DiStefano*, 808 F.3d at 848–49.

In evaluating the existence of a functional relationship, we have considered whether the printed matter merely informs people of the claimed information, or whether it instead interacts with the other elements of the claim to create a new functionality in a claimed device or to cause a specific action in a claimed process.

Emphasis added.

This is a claim construction question. *Praxair*, 890 F.3d at 1033 (“the Board properly addressed the printed matter doctrine during claim construction”).

2) Discussion

“We apply a two-step test to determine whether a limitation should be accorded patentable weight under the printed matter doctrine. First, we determine whether the limitation in question is directed toward printed matter.” *IOENGINE, LLC v. Ingenico Inc.*, 100 F.4th 1395, 1404 (Fed. Cir. 2024) (quoting *In re Distefano*, 808 F.3d at 848). “Only if the limitation in question is determined to be printed matter do we proceed to the second step, which asks ‘whether the printed matter nevertheless should be given patentable weight [i.e., to be used as a basis for distinguishing prior art].’” *Id.* “Printed matter is given such weight if the claimed informational content has a functional or structural relation to the substrate.” *Id.*

a) Step one

“[W]e must look at the ordinary meaning in the context of the written description and the prosecution history.” *Phillips*, 415 F.3d at 1313 (quoting *Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed. Cir. 2005)). The “proper definition is the definition that one of ordinary skill in the art could ascertain from the intrinsic evidence in the record’.” *Id.* at 1314 (quoting *Unitherm Food Sys., Inc. v. Swift-Eckrich, Inc.*, 375 F.3d 1341, 351 (Fed. Cir. 2004)). The intrinsic evidence in the record includes the claims, the specification, and the prosecution history. *Id.*

When we read claim 8 as a whole and read the specification, including Figures 1–23, it becomes clear that “fire hydrant management software”

refers to a computer system for managing information *about* fire hydrants. The record does not support Patent Owner’s view that “fire hydrant” that reflects a functional and structural distinction of the “management software.”

Rather, the intrinsic record agrees with Petitioner’s implicit construction of “fire hydrant” as describing the content of the data that the software processes, i.e., nonfunctional descriptive material. *See, e.g.*, Pet. 28 (discussed at DI 18–19); Pet. Reply 7 (“As the Board found, ‘fire hydrant’ simply describes the content of the data processed by the “management software,’ [DI], 20, which is also consistent with Williams’ testimony that the claimed asset “scope” is limited to fire hydrants.”) (citing Ex. 2020 ¶ 54; Ex. 1040, 92:17–93:1; Ex. 1002, 614).

Other than to describe the “typical” or “current” “fire hydrant management software program,” “fire hydrant management software” as recited in claim 8 is nowhere else mentioned in the ’966 patent. Ex. 1001, 1:63–66, 2:17–18. It is not expressly defined.

The focus of the ’996 patent is on a web registry. *See, e.g.*, Ex. 1001, 3:17–18 (“A system for a web based compliance registry including a database configured to store owned asset information.”), 3:55–56 (“manag[ing] a registry of owned assets and more specifically fire hydrant inspections.”) This is one of the aspects of the invention that distinguishes it from the “typical fire hydrant management software program.” *See, e.g., id.* at 2:34–35 (“Currently there is not a standard format for collecting fire hydrant information.”), 2:50–51 (“current software fails to record all the available data upon an inspection.”) The web registry is rendered operational by “general-purpose or special purpose computing system

environments or configurations” “not limited to, personal computers, server computers, hand-held or laptop devices, [etc.],” as well as software “in the general contest of computer-executable instructions, such as program modules, being executed by a computer.” *Id.* at 5:10–15, 5:21–22. The ’966 patent discusses the computer system via embodiments depicted in Figures 1–3. *Id.* at 5:33–8:3. With Figures 4A and 4B, ’966 patent begins describing using a web registry to collect and manage information about fire hydrants. *Id.* at 8:15, *et seq.* A POSA reading the remainder of the ’966 patent would understand that “fire hydrant” goes to the type of information being collected and managed by the web registry, not to a structural or functional aspect of the hardware/software that drives the registry. The computer system enabling the web registry remains functionally and structurally unchanged as the user inputs and manages different types of information about fire hydrants. In fact, “fire hydrant” is a “non limiting example.” *Id.* at 1:35. “[I]t should be readily appreciated that any other asset may be substituted for the fire hydrant.” *Id.* at 1:36–38.

Patent Owner cites [8a], [8b], [8c] and [8f] to argue that the term “fire hydrant” is not merely descriptive. PO Resp. 32. We are unpersuaded.

[8a] is the preamble. It provides no insight into whether “fire hydrant” is descriptive or functional. [8b] is also not instructive. It calls for a computer-based fire hydrant management software system to “retrieve” “real time records of assets from a database, the database being accessible and augmentable by a classes of user.” We do not see how that establishes “fire hydrant” as functional. Servers, per se, for example, typically retrieve records. *See, e.g.*, Ex. 1001, 6:44–46 (“The server 230 may be coupled to database 240 to retrieve information there from and to store information

thereto.”) [8c] is not connected to a device, let alone a “fire hydrant management software.” [8f] recites that software providing to an inspector the owner selects “a web-based template configured to describe the asset an each of the steps of the inspection.” This step provides no insight into whether “fire hydrant” is descriptive or functional.

Patent Owner further argues that the term “fire hydrant” is not merely descriptive because it “provides the subject of the ‘management’ of ‘requisite inspections’ performed by the software, which must conform to hydrant-specific regulations.” PO Resp. 32 (citing Ex. 2015 ¶¶ 30–64). *See* also PO Sur-reply 10 (“The record is uncontroverted that the regulatory scheme for the inspection of fire hydrants and related assets are distinct from other types of assets.”) (citing Ex. 2020 ¶¶ 54–55; 151–179; Ex. 2015 ¶¶ 30–64), 11 (“Any asset management system for tracking the inspection/maintenance of fire hydrants and related assets must comply with applicable codes and regulations.”) (citing Ex. 2015 ¶¶ 31–34). “Also, GIS is a significant part of the invention; hence, a POSA would recognize that ‘fire hydrant management software’ would have a very different structure than general asset management software or software used to track the location and condition of other assets, like Key’s pressure vessels or Chauhan’s utility assets.” PO Resp. 32 (citing Ex. 2020 ¶¶ 118–150, 152–169).

Since the claim does not call for the “fire hydrant management software” to manage requisite inspections conforming to hydrant-specific regulations or to track the location and condition of assets, this cannot be a persuasive argument. Even if we assume *arguendo* that the claim did call for it, we do not see how that would show the “fire hydrant management

software” is structurally different from “management software” that would manage information about assets other than fire hydrants. Rather, it would show that “fire hydrant management software” processes information (e.g., regulations, location) about fire hydrants.

Patent Owner also explains that the specification “describes, and claim 8 recites, fire hydrant management software in combination with a web-registry and collaborative design which solved” earlier attempts at using management software that failed to cure low compliance rates. PO Resp. 32–33 (citing Ex. 1001, 1:59–2:13, 2:66–3:4).

But Patent Owner then directs our attention to Figures 4A and 4B. PO Resp. 33 (citing Ex. 1001, 8:4–14). Figures 4A and 4B show an embodiment of a data relationship table

configured to store information including but not limited to; 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, 8:6–14. The disclosure of “fire hydrant management software” having data fields with information about fire hydrants *supports* Petitioner’s implicit construction. It describes the content of the data that the software processes, rather than a functional aspect of the software. In arguing that “[t]he relational database shows how the fire hydrant management software can be configured to receive and analyze information for each fire hydrant,” Patent Owner in effect agrees that “fire hydrant” characterizes the content of the information being processed, not a function or structure of the

“management software.” PO Resp. 33 (citing Ex. 2020 ¶¶ 174–177). *See* also Ex. 1020, *inter alia*, ¶ 175 (Mr. Williams testifies that “the above ‘966 fire hydrant data schema [referring to Figures 4A and 4B] is far more sophisticated than that for a ‘traditional’ asset, such as a boiler” which reflects the amount and importance of the type of information gathered, not to the function/structure of the software, notwithstanding that claim 8 is not limited to a “sophisticated” data schema.)

Patent Owner further lists a number of “advantages of using the fire hydrant management,” such as that it will benefit budgeting committees. How this helps resolve whether “fire hydrant” is or is not a functional characteristic is unclear. PO Resp. 33–34.

Given the totality of the evidence, we determine that the term “fire hydrant” is claimed only for what it communicates, that is, “fire hydrant” refers to the type of information the fire hydrant management software processes. Accordingly, we determine that “fire hydrant” in the claim limitation “fire hydrant management software” is nonfunctional descriptive material, i.e., printed matter. *Cf. Ex parte Curry*, 84 U.S.P.Q.2d 1272, 1274 (BPAI 2005) (informative), *aff’d* (Fed. Cir. Appeal No. 2006-1003, *aff’d* Rule 36 June 12, 2006) (“the ‘wellness-related data in the databases . . . does not functionally change either the data storage system or communication system used in the method of claim 81. Nonfunctional descriptive material

cannot render nonobvious an invention that would have otherwise been obvious.”)².

b) Step two

At this step we ask whether “fire hydrant” should be given patentable weight.

“Fire hydrant” merely informs people of the claimed information being processed. It does not interact with the other elements of the claim to create a new functionality in a claimed device or cause a specific action in the claimed process. *See C.R. Bard*, 979 F.3d at 1381. As a result, we do not give it patentable weight in the obviousness analysis.

c. Conclusion

For the foregoing reasons (II.C.4.a.), we are unpersuaded that the intrinsic evidence requires a construction that limits the plain and ordinary meaning of “fire hydrant management software” such that it must schedule maintenance and create reminders for service as Patent Owner proposes.

For the foregoing reasons (II.C.4.b.), we find that the phrase “fire hydrant” in the claim limitation “fire hydrant management software” is nonfunctional descriptive material and as such will not be give it patentable weight in the obviousness analysis.

2

<https://www.uspto.gov/sites/default/files/ip/boards/bpai/decisions/inform/fd050509.pdf>

5. [8d] “notice [that] includes a standard format description of the type of inspection, and a cost associated with the type of inspection” and [8e] “a standard format notice . . . of the status of the assets assigned to the approval authority,”

1) Background

In the Order, we stated

During the hearing of Oct. 24, 2024, the parties argued over whether the asserted prior art showed or rendered obvious the two notices recited in claim 8; that is, (a) “[a] notice [that] includes a standard format description of the type of inspection, and a cost associated with the type of inspection” and (b) “a standard format notice . . . of the status of the assets assigned to the approval authority.” Ex. 1001, 15:33–36, 43–44. The arguments centered on the content of the notices *Cf.*, e.g., Patent Owner Response 39 (“Key fails to disclose that the task [in Key] ‘includes standard format description of the type of inspection, and a cost associated with the type of inspection.’”))

Order 2 (alteration in original). We invited the parties to address whether the informational content of the notices in (a) and (b) should be treated as printed matter. *Id.* at 4.

Petitioner’s position is, *inter alia*, that “[t]he claim limitations are directed to the content of information provided to users—information which has no other impact on, or use within, the claim or any step—and should thus be treated as printed matter and given no patentable weight.” Pet. Printed Matter Brief 1 (citing *Praxair*, 890 F.3d at 1032–33) (emphasis omitted).

Patent Owner’s position is that “[t]he claimed standard format notices are not printed matter under the first prong, as they are communications that include certain components, without reciting any specific information contained in the notices themselves.” PO Printed Matter Brief 1 (referring to

the two-prong test set forth in *IOENGINE*, 100 F.4th at 1404). “Even, *arguendo*, if the Board considers the second prong, the printed matter doctrine is inapplicable as the notices and components thereof have a functional relationship to the claimed fire hydrant management software that tracks requisite inspection of an owned asset and are interrelated with the remainder of the claim.” *Id.*

2) Discussion

a) Step one

We have reviewed the parties’ respective positions and find that Petitioner has the stronger position.

As the Petitioner points out the ’966 patent discloses that “notices” “may be provided on a piece of paper (e.g., ‘physical mail’ with certain information), by ‘email,’ or by unspecified ‘other’ means.” Pet. Printed Matter Brief 3–4 (citing Ex. 1001, 4:27–29). We agree that the “informational content here—including a standard format description of inspection type and cost, as well as asset status [on, for example, a piece of paper] —is just like those repeatedly found to be printed matter.” *Id.* at 4 (citing various decisions including *In re Theresa*, 720 F. App’x 634, 636–37 (Fed. Cir. 2018) (involving marking labels with “symbols”)).

Patent Owner focusses on the phrase “standard format” which appears in [8d] to describe the description included in the notice; i.e., “a standard format description” and in [8e] to describe the notice, i.e., “a standard format notice.” PO Printed Matter Brief 4–5. Patent Owner appears to argue that “standard format” represents a functional characteristic because “the claimed ‘**standard format**’ aspect of the notices solves a problem that plagued conventional methods and refers to **a format that would be common**

across jurisdictions and users.” *Id.* (citing PO Sur-Reply 18–19 (citing Ex. 1001, 2:34–37, 3:1–4)).

Claim 8 does not call for any particular format, let alone one that is common across jurisdictions and users. Also, there is no discussion in the specification about a format for the notices. It is unclear from reading the specification what a “standard” format for a notice would entail. Patent Owner cites Ex. 1001, 2:34–37, 3:1–4. But those passages refer to “a standard format for collecting fire hydrant information,” not a “standard format description” for a notice sent to an asset owner ([8d]) or a “standard format notice” sent to the approval authority ([8e]).

The ’966 patent discloses that the notice (for the asset owner) may be “via email, physical mail, or other” (Ex. 1001, 4:28), which would suggest to a POSA that “standard format” refers to the format of the content of the information (e.g., arrangement of the words) being communicated by “email, physical mail, or other.” Since “standard format” describes the content of the information rather than a structural or functional aspect of the underlying substrate, we are persuaded that “standard format” should be treated as printed matter.

Given the totality of the evidence, we determine that “a standard format description of the type of inspection, and a cost associated with the type of inspection” and “a standard format . . . of the status of the assets assigned to the approval authority” for the respective notices in [8d] and [8e] refer to the type of information communicated by the notices. They are claimed only for what the notices communicate. Accordingly, we determine that the informational content of the notices are nonfunctional descriptive material, i.e., printed matter.

b) Step two

The informational content of the notices merely informs people of the information in the notices. They do not interact with the other elements of the claim to create a new functionality in a claimed device or cause a specific action in the claimed process. We agree with Petitioner that “the steps of challenged claim 8 are carried out the *same way*, regardless of the particular informational content included in the notices (or whether the notices themselves are even provided). Nowhere else in the claim is the informational content or the notices used or acted upon.” Pet. Printed Matter Brief 5–6.

Patent Owner argues that “the notices at issue are interrelated with the rest of claim 8 and substantially contribute to the effectiveness of the invention recited therein at improving compliance.” PO Printed Matter Brief 5 (citing Ex. 2015 ¶¶ 47–56; Ex. 2020 ¶¶ 69, 95–104, 107). Patent Owner then recites [8b]–[8e] and [8g]–[8i]. *Id.* According to Patent Owner, the information recited in [8d] and [8e] included in the notices “**are interrelated to virtually every element of the claim**” in [8b]–[8e] and [8g]–[8i]. *Id.* at 6.

We disagree with Patent Owner’s perspective of what is being claimed. A “standard format description of the type of inspection, and a cost associated with the type of inspection” ([8e]) is nowhere acted upon by another step in the claim. No step depends on the type of inspection or the associated cost for its performance. Likewise, “a standard format . . . of the status of the assets assigned to the approval authority” is ([8e]) is nowhere acted upon by another step in the claim. Steps [8g]–[8i] refer to inspection information and a “standard format compliance report.” They are not

connected to the information included in the notices sent to the asset owner and approval authority.

For these reasons, we do not give “standard format description of the type of inspection, and a cost associated with the type of inspection” ([8e]) and “a standard format . . . of the status of the assets assigned to the approval authority” ([8e]) patentable weight in the obviousness analysis.

3) Conclusion

We find that the recited informational content for the notices in [8d] and [8e] is nonfunctional descriptive material and as such we will not give it patentable weight in the obviousness analysis.

4) Patent Owner Request

Patent Owner states that “[b]y raising the printed matter doctrine at this late stage without providing for the parties to submit evidence thereon, the Board effectively denied PO any opportunity to introduce evidence regarding the functional/interrelatedness of the notices at issue.” PO Printed Matter Brief 7 (citing 5 U.S.C. §§ 554(b)(3), 554(c), 554(d); *Axonics, Inc. v. Medtronic, Inc.*, 75 F.4th 1374, 1383 (Fed. Cir. 2023)). Patent Owner requests “that it be granted a reasonable opportunity to submit expert declarations on the fact issues related to the functionality and interrelatedness of the notices at issue and components thereof.” *Id.* The request is denied.

We raised the printed matter doctrine because of Patent Owner’s arguments. In the Patent Owner’s Response, for the first time, Patent Owner argues that “Key fails to disclose that the task ‘includes standard format description of the type of inspection, and a cost associated with the type of inspection.’ ([8d]).” PO Resp. 39; *see also* Tr. 28:9–12, 29:3–6, 31:2–3.

Patent Owner also recently argued over the patentable significance of the content of the [8e] notice. *See* PO Sur-reply 19 (discussing the claimed “standard format” is different from Key’s “different formats . . . used in different jurisdictions”); *see also, e.g.*, Tr. 37:7–9 (“[Key] doesn't provide the notice that’s recited in 8e where it has to provide notice to the approval authority of the assets under its control.”).

The printed matter doctrine relative to these limitations was not an issue at the time of the DI. There was no reason for us to raise it then. These newly argued-over patentable distinctions over Key only matter if the content of the notices in [8d] and [8e] amount to a functional or structural distinction over Key. However, Patent Owner did not take the opportunity to introduce evidence regarding the functional/interrelatedness of the content of the notices. Instead, we took the opportunity to raise it ourselves - in direct response to Patent Owner’s arguments – and providing the parties an opportunity to weigh on whether the printed matter doctrine applies prior to this decision. *See* Order.

We are satisfied that that Patent Owner has had ample opportunity to address the printed matter doctrine as it concerns the information contained in the notices of [8d] and [8e].

D. Ground I

Petitioner challenges claims 8–16 as unpatentable under 35 U.S.C. § 103(a) over the combination of Key, Chauhan, Sweeney, and McKinney. Pet. 21–77.

1. Independent 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”

Petitioner contends that the combination of Key, Chauhan, Sweeney and McKinney discloses and renders obvious the claimed computer-implemented method comprising the claimed steps for the combined reasons set forth in the Petition with respect to each of [8a]–[8i]. Pet. 29 (citing, *inter alia*, Ex. 1003 ¶¶ 142–148); *see also id.* at 21–28.

Patent Owner does not address the preamble *per se*. *See generally* PO Resp. However, Patent Owner explains why the references do not disclose various limitations in [8a]–[8f], and on that basis argues that the combination of Key, Chauhan, Sweeney and McKinney does not disclose and render obvious the claimed computer-implemented method comprising the claimed steps. *Id.* at 37–38 (discussing [8b], [8c], [8e]), 38–41 ([8d]), 41–42 ([8e]), 43–46 ([8f]), 46–50 ([8a], [8b], [8f])). We address those limitations below.

[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”

Petitioner contends that Key alone or in combination with Chauhan discloses or renders obvious limitation [8a]. Pet. 29 (citing Ex. 1003 ¶¶ 149–157).

Petitioner contends that “Key, Chauhan, Sweeney and McKinney are complementary references that are all in the field of asset management, monitoring, and compliance (including, e.g., inspection, repairs, scheduling, and notices) implemented as online, web-based systems and methods using conventional computers, software, and databases.” Pet. 21 (citing Ex. 1003 ¶¶ 106, 109–121).

Petitioner then explains that “Key discloses ‘a *central* staging database for data’ where the ‘central system enables *real time* availability of current data’ and ‘*complete historical information* about the stored objects ... available online’.” Pet. 23 (citing Ex. 1005 ¶¶ 16–17, 69, 104–114, Fig. 7; Ex. 1003 ¶¶ 78, 110) (alteration in original). According to Petitioner, Key “discloses that its processes are ‘carried out ... by software executing in computers’ and various servers (web servers, application servers) running front-end and application software that operate to provide inspection tracking and management including a web interface.” *Id.* at 23–24 (citing Ex. 1005 ¶¶ 63, 67–70, Fig. 4; Ex. 1003 ¶¶ 80–81, 147) (alteration in original).

According to Petitioner, Key, for example, discloses, *inter alia*, a ‘web interface’ that provides remote ‘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 ‘regulatory entity’ that reviews and approves of the inspection (the claimed ‘approval authority’); and (3) ‘inspectors’ (the claimed ‘inspector’).

Pet. 32 (citing Ex. 1005 ¶¶ 47–48, 70, 76–77, Fig. 4 (reproduced at Pet. 33); Ex. 1003 ¶¶ 56, 81).

Patent Owner argues that Key does not disclose a “fire hydrant” or “fire hydrant management software.” PO Resp. 46 (citing Ex. 1003 ¶ 150).

Petitioner concedes that “Key does not expressly disclose ‘fire hydrants’ as one of various owned assets” but indicates that it “discloses that its system and method are to be used with various objects such as boilers, elevators, amusement park rides, etc., as well as ‘*other required jurisdictional inspection of objects*,’ and, recognizes that objects ‘can be dangerous if they are not properly maintained and operated.’” Pet. 24 (quoting Ex. 1005 ¶ 15). According to Mr. MacInnes, “[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.” Ex. 1003 ¶ 126; Pet. 24.

Patent Owner responds: “Mr. MacInnes admits Key does not disclose a ‘fire hydrant’ or ‘fire hydrant management software.’” PO Resp. 46 (citing Ex. 1003 ¶ 150). “[H]e notes that Key states it could be employed to other objects, and that pressure vessels disclosed in Key may be dangerous; hence, a POSA would have been motivated and found it logical to apply Key’s system to manage fire hydrants.” *Id.* (citing Ex. 1003 ¶¶ 124–126).

According to Patent Owner, there is an incorrect implicit assumption in Mr. MacInnes’s statement equating fire hydrants with, for example, Key’s “pressure vessels, boilers.” *Id.*; Ex. 1005 ¶ 15. According to Patent Owner,

fire hydrants and other assets are not “interchangeable for an asset management system.” PO Resp. 46. “[D]ifferent kinds of additional assets, like fire hydrants, [cannot] be merely plugged into an asset management system, even if it is directed to a different application, such as Key’s pressure vessels.” *Id.* at 46–47.

Patent Owner then explains why fire hydrants are different from other assets. PO Resp. 47. For example, “[t]hey differ with respect to a) their purpose (e.g. what it is used for, by whom, and why); and b) the data captured to support that purpose, and how it is captured, stored, and retrieved.” *Id.* “Those assets [fire hydrants] are subject to, and the claim 8 process must conform with, extensive regulations that do not apply to other assets, like Key’s pressure vessels.” *Id.* (citing Ex. 2015 ¶¶ 30–64). According to Patent Owner, Figures 4A and 4B illustrate the complex inspection, testing, and maintenance requirements (“ITM”) for fire hydrants. *Id.* “That database and schema are vastly more complex than flat file systems, such as the database shown in Key.” *Id.* (citing Ex. 1005, Fig. 7).

We are unpersuaded by Patent Owner’s argument that Key does not disclose [8a] because it does not disclose “fire hydrant management software.” The argument is predicated on limitations not in the claim. For example, claim 8 is not limited to any particular database or schema. It is also predicated on construing “fire hydrant” as a functional limitation to the “management software;” that is, a “fire hydrant management software” is different from one managing information about other assets such as pressure vessels as in Key. For reasons discussed in II.C.4.b., we do not find that “fire hydrant” functionally limits the “management software.” Rather, we characterize it as nonfunctional descriptive material and therefore give it no

patentable weight. *See* II.C.4.b. Accordingly, it is sufficient that Petitioner has shown that Key discloses a management software that meets the claim but for processing information about, for example, pressure vessels rather than fire hydrants. Ex. 1005 ¶ 15.

Even if we assume *arguendo* that “fire hydrant” should be given patentable weight, Petitioner shows that Chauhan discloses software for managing information about assets such as fire hydrants. “Chauhan discloses a ‘UtilityCenter™ [that] is an integrated GIS [geographic information system] suite of applications that manages information across the entire utility.’” Pet. 24 (citing Ex. 1016 ¶¶ 39–42, Fig. 1; Ex. 1003 ¶¶ 84–86, 128–129) (alterations in original). Petitioner contends that Chauhan is intended for “‘**fire hydrant** inspections’” and that there is a “‘**HYDRANT** Theme’ that allows an inspector to ‘edit and view inspection fields.’” *Id.* at 24–25 (citing Ex. 1016 ¶ 207; Ex. 1003 ¶¶ 85, 127). According to Petitioner, “Chauhan discloses that its UtilityCenter has wide applicability and that the ‘**same technology**’ can be used for various other assets and applications including . . . ‘fire and police departments’” *Id.* at 25 (citing Ex. 1016 ¶¶ 42, 218; Ex. 1003 ¶¶ 114–115, 130). According to Petitioner, this renders obvious the use of management software to manage information concerning fire hydrant assets. This discussion sufficiently addresses the “fire hydrant management software” limitation consistent with Petitioner’s (and our) view that the phrase “fire hydrant” relates to the content of the data the software processes. *See supra* § II.C.4.a.

In regards to Chauhan, Patent Owner argues that it “relates to a different technical field.” PO Resp. 49.

While Mr. MacInnes notes Chauhan states that the same technology “has been tailored to the specific needs of public agencies, such as fire and police departments” (see EX1003, ¶130), Chauhan nowhere explains the needs of the fire department or how the utility outage management system was modified, or why a fire department would need a power outage management system, as described in Chauhan.

Id. at 49–50.

We are unpersuaded. Given that Key and Chauhan both teach databases, Chauhan would have led a POSA to use a database for “needs of public agencies, such as fire and police departments,” which would include information for fire hydrants. Ex. 1016 ¶ 218; Pet. 25; *cf.* *KSR*, 550 U.S. at 401 (“If a person of ordinary skill in the art can implement a predictable variation, and would see the benefit of doing so, § 103 likely bars its patentability.”)

Petitioner sufficiently shows on this record that Key alone or in combination with Chauhan discloses or renders obvious “granting remote access to a web-based registry system, wherein the web-based registry is configured to run” a “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.”

[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;”

Petitioner contends that Key alone or in combination with Chauhan discloses or renders obvious limitation [8b]. Pet. 34 (citing Ex. 1003 ¶¶ 158–164).

Petitioner contends, *inter alia*, that Key discloses a database. Pet. 34 (citing Ex. 1005 ¶¶ 16–19, Figs. 3, 7 (depicting database 350); Ex. 1003 ¶¶ 78, 160). According to Petitioner, “[p]er Key, 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.’” *Id.* (citing Ex. 1005 ¶ 17; Ex. 1003 ¶¶ 78, 161) (alteration in original).

Petitioner further contends that “Key discloses that each of the various classes of users can access and update and add to (augment) the database and information contained therein, *e.g.*, ‘the inspector’ can ‘input the inspection information.’” Pet. 37 (citing in part Ex. 1005 ¶ 88, Fig. 5; Ex. 1003 ¶ 164).

Patent Owner’s arguments are limited to arguing that the references do not teach a “fire hydrant management software” in [8b] for the same reasons used in arguing [8a]. *See* PO Resp. 46–50. We addressed those reasons above in discussing [8a].

As Petitioner contends, Key shows a centralized system with a database “that allows for easy updates and reverse delta storage” and “enables real time availability of current data” and is augmentable by a user, *i.e.*, an inspector, as required by [8b]. Ex. 1005 ¶¶ 16, 17, 88; Ex. 1003 ¶¶ 78, 16.

Accordingly, Petitioner sufficiently shows on this record that that Key alone or in combination with Chauhan discloses or renders obvious limitation [8b].

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

Petitioner contends that Key discloses, or it would have been obvious to include as part of Key, step [8c]. Pet. 38 (citing Ex. 1003 ¶¶ 165–171).

Petitioner shows that Key discloses in Figure 5 that its system “***analyzes the database*** to determine those objects requiring scheduling of an inspection.” Pet. 39 (citing Ex. 1005 ¶ 80, Fig. 5; Ex. 1003 ¶ 167).

Patent Owner has provided no substantive argument challenging Petitioner’s contention. *See generally* PO Resp. 35–50.

As Petitioner contends, Key discloses analyzing records of assets from a database to identify notification events. *See* Ex. 1005 ¶ 80 (“the JOM analyzes the database to determine those objects requiring scheduling of an inspection.”)

Petitioner sufficiently shows on this record that Key discloses, or it would have been obvious to include as part of Key, step [8c].

[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;”

Petitioner contends that “Key alone or in combination with Sweeney discloses, or it would have been obvious to include as part of Key, step [8d].” Pet. 42 (citing Ex. 1003 ¶¶ 172–190).

Petitioner shows that Key discloses, *inter alia*, “a ‘notification system’ to notify users of notification events including a designated interval

in advance of upcoming inspection deadlines for the owned assets whereby notifications are sent, e.g., ‘in a known manner usually via email,’ including automatic notification to owners, based on database record analysis.” Pet. 42 (citing Ex. 1003 ¶¶ 166–171, 175). According to Petitioner, Key further discloses “receiving an inspection notification; and scheduling an inspection date.” *Id.* (citing Ex. 1005, col. 19; Ex. 1003 ¶ 176).

Patent Owner argues that “Key does not disclose providing notices to asset owners or to the jurisdiction/approval authority of an upcoming inspection (i.e., in advance).” PO Resp. 38 (Ex. 2020 ¶¶ 59–65, 252–257).

[8d] calls for “notifying an owner of an asset of a notification event.” The “notification event” comprises “a designatable interval in advance of an impending deadline for the inspection.” Based on a plain reading of [8d], an asset owner is notified of an impending *deadline* for an inspection, not an upcoming inspection. The two are not necessarily the same.

Be that as it may, Petitioner replies that, *inter alia*, “Key expressly gives an example of how an owner is notified in advance of an inspection (e.g., a rescheduled inspection).” Pet. Reply 10 (citing Ex. 1005 ¶ 77) (emphasis omitted).

Patent Owner disagrees, arguing that paragraph 77 of Key “merely states that the asset owner is notified of a rejected inspection report (*i.e.*, a report of an inspection that already occurred).” PO Sur-reply 15.

Petitioner has the better argument. Paragraph 77 of Key states: “Upon acceptance of a review item, the item is deleted from a task listing. Upon rejection of the review, the owner is automatically notified and another inspection is scheduled.” Ex. 1005 ¶ 77; Pet. 41. A POSA reading this sentence would understand that the owner is notified not just of the review’s

rejection but of another inspection. In scheduling another inspection, the owner is notified in advance of an “upcoming inspection.”

On whether the references disclose or render obvious notifying an asset owner of an impending deadline for an inspection, Petitioner contends, *inter alia*, that Key teaches “‘the JOM [‘jurisdiction online manager’] 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).” Pet. 43 (quoting Ex. 1005 ¶ 99). This information is available to insurance company inspectors and jurisdiction reviewers. *See, e.g.*, Ex. 1005 ¶ 65.

But, according to Patent Owner, “Key delegates inspections to insurers not asset owners, asset owners only have limited participation (paying fees) after an inspection.” PO Resp. 40.

In that regard, Petitioner cites Sweeney, which, according to Petitioner discloses, *inter alia*, 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.” Pet. 47 (citing Ex. 1006 ¶ 39; Ex. 1003 ¶ 186) (alteration in original).

However, Patent Owner argues, Mr. “MacInnes acknowledged the inspection reports described in Sweeney were for ongoing or completed inspections (*i.e.*, not in advance of the inspection).” PO Resp. 41 (citing Ex. 2021, pp. 88–89). “Querying such reports is not providing [8d] notice to an asset owner in advance of any inspection.” *Id.*

In our view, the combination of Key and Sweeney would have led a POSA to use the Key JOM to notify an asset owner of an inspection deadline. Although we agree with Patent Owner that Key limits the

inspection details to insurance company inspectors and jurisdiction reviewers, the owner is nevertheless provided access. *See* Pet. 32 (citing, *inter alia*, Ex. 1005 ¶¶ 70, 47, 48, 76, 77; Ex. 1003 ¶¶ 156, 81). Given Sweeney’s disclosure of providing inspection reports to asset owners, it would have been obvious over the combination of Key and Sweeney to also provide the asset owner a notification of an inspection deadline.

Patent Owner further argues that Key discloses a task, not a “notice” that “includes standard format description of the type of inspection, and a cost associated with the type of inspection.” PO Resp. 39.

The claim does not indicate a form for the “notice.” And, furthermore, the specification discloses that a “notice” can be “email, physical mail, or *other*.” Ex. 1001, 4:28. Emphasis added. Thus, a task may be a “notice” if the task notifies one of a notification event.

In that regard, Petitioner contends, *inter alia*, that “Per Key, ‘[t]he work assignment unit automatically schedules inspection for objects with upcoming inspection due dates’ and ‘generate[s] and place[s] the task in the insurance company scheduled inspection listing’.” Pet. 39 (citing Ex. 1005 ¶ 76; Ex. 1003 ¶ 166) (alterations in original).

Patent Owner argues that “[Mr.] MacInnes acknowledged that when an inspection is due, Key describes placing a task in a task listing for an insurance company, not sending a notice.” PO Resp. 39 (citing Ex. 1003 ¶ 167; Pet. 42).

We are unpersuaded by Patent Owner’s argument because Mr. MacInnes did not testify that Key’s placing a task in a task listing was not sending a notice. *See* Ex. 1003 ¶ 167. In fact, Patent Owner acknowledges that Mr. MacInnes “opined that placing a task in the insurance company task

list was within the ‘notice’ recited in [8d].” PO Resp. 39 (citing Ex. 2021, pp. 110–112).

Even if *arguendo* Key’s placing a task in a task listing does not equate to the “notice” of [8d], Petitioner has shown that “Key also discloses a review unit 445, wherein if the review is rejected, ‘the owner is automatically notified and another inspection is scheduled.’” Pet. 41 (quoting Ex. 1005 ¶ 77; Ex. 1003 ¶ 170). This teaches notifying an owner of a notification event (scheduled inspection) and therefore satisfies the “notice” requirement of [8d].

Finally, Patent Owner argues that Key does not disclose a notice with a “standard format description of the type of inspection, and a cost associated with the type of inspection.” PO Resp. 39. We have construed this as nonfunctional descriptive material and as such do not give it patentable weight. *See supra* § II.C.5.

Petitioner sufficiently shows on this record that Key alone or in combination with Chauhan discloses or renders obvious limitation [8d].

[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;”

Petition contends that Key discloses, or it would have been obvious to include as part of Key, step [8e]. Pet. 49 (citing Ex. 1003 ¶¶ 191–208).

For that part of the limitation calling for “based on the analysis, sending a standard format notice to the approval authority of the status of the assets assigned to the approval authority,” Petitioner contends, *inter alia*, that “Key discloses providing notifications to users (such as approval

authorities, etc.).” Pet. 49 (citing Ex. 1003 ¶¶ 194–197). According to Petitioner, Key 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.’” *Id.* (citing Ex. 1005 ¶ 68; Ex. 1003 ¶¶ 194–197) (alterations in original).

For that part of the limitation calling for “wherein the approval authority, upon accessing the web-based registry, may update and review the status of the assets assigned,” Petitioner contends, *inter alia*, that “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.’” Pet. 52 (citing Ex. 1005, *inter alia*, ¶ 65) (alteration in original).

Patent Owner argues that

Petitioners do not identify any portion of Key that teaches it was necessary to notify the jurisdiction in advance of an upcoming inspection, or “sending a standard format notice to the approval authority of the status of the assets.” (EX2020, ¶¶ 258–262.) Key teaches away from notifying an approval authority in advance of an inspection by having jurisdictions delegate inspections to insurers. (EX1005, [0044.]; EX2020, ¶ 260.) Key also does not teach sending an email or other message using its notification unit in advance of an inspection. (*See* EX1005, [0071], [0083]; EX2020, ¶ 261.)

PO Resp. 42–43.

Patent Owner’s argument is unpersuasive. [8e] does not require notifying an approval authority in advance of an inspection. Nor is there a

requirement to send an email or other message using its notification unit in advance of an inspection.

Regarding the notice having to be in a standard format providing the status of the assets, we have construed this as nonfunctional descriptive material and as such do not give it patentable weight. *See supra* § II.C.5.

Petitioner sufficiently shows on this record that Key alone or in combination with Chauhan discloses or renders obvious limitation [8e].

[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;”

Petitioner contends that Key alone or in combination with McKinney and/or Sweeney discloses, or it would have been obvious to include as part of Key, [8f]. Pet. 53 (citing Ex. 1003 ¶¶ 209–222).

For “upon logging on to a password controlled website configured to provide access to the fire hydrant management software,” Petitioner contends that “Key discloses that users—including inspectors—log on to a password protected website to access the management software.” Pet. 53 (citing Ex. 1005 ¶¶ 78, 106, 115–123, Fig. 8; Ex. 1003 ¶¶ 210, 157).

For “providing to an inspector the owner selects . . . a web-based template configured to describe the asset an[d] each of the steps of the inspection,” Petitioner contends, *inter alia*, that “Key further discloses that ‘the jurisdiction’s ***inspection form or a similar inspection template*** can be provided to the inspector’.” Pet. 55 (citing Ex. 1005 ¶¶ 18, 42, 45; Ex. 1003 ¶ 122).

For “the selection based upon a list of qualified inspectors that are available to inspect the asset based upon attributes including proximity to the asset,” Petitioner contends this “is disclosed by the combination of Key and McKinney and/or Sweeney.” Pet. 59 (citing Ex. 1003 ¶¶ 217–222).

According to Petitioner, Sweeney, for example, discloses, “[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 (as applied to Key’s JOM, the qualified inspector).” *Id.* at 60 (citing Ex. 1006 ¶¶ 43–44, Fig. 1; Ex. 1003 ¶ 220) (alterations in original).

Patent Owner argues that “[i]n [8f], the asset owner selects the inspector from a list of available inspectors based upon attributes including the inspector’s proximity to the asset.” PO Resp. 43 (citing Ex. 1001, 15:52–54). Patent Owner then argues that “Key teaches away from the asset owner selecting the inspector, by having jurisdictions perform inspections themselves or delegating them to insurance companies - not owners of asset.” *Id.* (citing Ex. 1005 ¶¶ 44, 83). “Key does not disclose providing the asset owner (or insurer) with a list of inspectors, much less their proximity to the asset.” *Id.* (citing Ex. 2020 ¶¶ 263–267).

In our view, the combination of Key and Sweeney renders obvious to base an asset owner’s selection of an inspector on a list of qualified inspectors available to inspect an asset. As Petitioner shows, Sweeney discloses an asset owner selecting a contractor based on submitted bids. Pet. 60 (citing Ex. 1006 ¶¶ 43–44, Fig. 1; Ex. 1003 ¶ 220). There is no teaching away. Providing an asset owner with a list of qualified inspectors from which to select an inspector would have been obvious to one of ordinary skill in the art given the combination of Key and Sweeney’s

disclosure of providing bids from which to select a contractor. *Cf. KSR*, 550 U.S. at 401 (“if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond that person's skill”).

Regarding the list of qualified inspectors being based on attributes that include the proximity to the asset, Patent Owner acknowledges that “Mr. MacInnes [] relied on Sweeney’s construction bid submission process asserting: ‘Contractors authorized to submit bids may be limited by location (‘e.g., area, regional, or national’), that is, in proximity to the asset.’” PO Resp. 45 (citing Ex. 1003 ¶ 220 (citing Ex. 1006 ¶ 43); *see* Pet. 59). Patent Owner argues, however, that “Sweeney which describes contractors as ‘area, regional, or national’ – it does not limit bidding based on that designation or on proximity to a construction project.” *Id.* at 45–46 (citing Ex. 1006 ¶ 43). We are unpersuaded.

Paragraph 43 of Sweeney states, in part:

An example embodiment of the present invention may further include the provision of bid information 38 for a construction project related to the construction asset. An online bid submission form may be provided to a plurality of contractors for use in submitting a bid on the project. Contractors (e.g., area, regional, or national contractors) may be notified by email of the bidding for the project and provided with access to the bid submission form and bid information 38.

Ex. 1006 ¶ 43. Whether they be area, regional, or national contractors, the bidding process would necessarily include contractors proximate to a construction project as they would be the likeliest candidates for the job. Providing an asset owner with a list of qualified inspectors that includes

inspectors proximate to the asset would have been obvious to a POSA given the combination of Key and Sweeney’ disclosure. *See KSR*, 550 U.S. 401 (“When a work is available in one field, design incentives and other market forces can prompt variations of it, either in the same field or in another. If a person of ordinary skill in the art can implement a predictable variation, and would see the benefit of doing so, § 103 likely bars its patentability.”)

Petitioner sufficiently shows on this record that Key alone or in combination with Chauhan discloses or renders obvious limitation [8f].

[8g]–[8i]

We have reviewed the evidence Petitioner has presented with respect to limitations [8g]–[8i] and based on that evidence we determine that Petitioner sufficiently shows on this record that Key teaches or would have rendered obvious these limitations. *See* Pet. 61–67.

Patent Owner has not responded to Petitioner’s challenge as to limitations [8g]–[8i] with any particularity. *See generally* PO Resp.

2. Motivation to Combine Key, Sweeney, Chauhan, and McKinney

In order to demonstrate obviousness, a petitioner must demonstrate that a skilled artisan would have had a reason to combine the teachings of the prior art in the manner claimed in the patent and would have had a reasonable expectation of success in doing so. *KSR*, 550 U.S. at 406 (2007). “To facilitate review, this analysis should be made explicit.” *Id.* at 401; *see In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”).

In that regard, Petitioner’s position is that, *inter alia*, the combination of Key, Chauhan, Sweeney, and McKinney renders obvious the claimed method. *See, inter alia*, Pet. 21–27 (discussing the combination of Key, Chauhan, Sweeney, McKinney), 53 n.8 (“it would have been obvious that such software was used for fire hydrant management”) (relying on the discussion at Pet. 21–27). According to Petitioner, “Key, Chauhan, Sweeney and McKinney are complementary references that are all in the field of asset management, monitoring, and compliance (including, e.g., inspection, repairs, scheduling, and notices) implemented as online, web-based systems and methods using conventional computers, software, and databases.” *Id.* at 21. Petitioner explains, *inter alia*, that:

the prior art demonstrates that (i) there was a well-known need and desirability to monitor and inspect various assets to ensure compliance and proper operation, (ii) the need included to improve the monitoring/inspection process through use of web-based computer systems and databases thereby becoming more efficient and less costly, and (iii) such assets were interchangeable within inspection compliance monitoring and reporting systems (including assets for which inspection compliance was regulated, including life/safety and non-life/safety assets).

Id. at 25 (citing, *inter alia*, Ex. 1003 ¶¶ 131–138).

Petitioner sufficiently shows the claimed process would have been obvious to a POSA based on the combination of Key, Chauhan, Sweeney, McKinney, with a reasonable expectation of success. It is consistent with Petitioner’s implicit (and our) construction of “fire hydrant management software;” that is, as software managing information about fire hydrant assets.

Patent Owner argues that Petitioner fails to show that it would have been obvious, with a reasonable expectation of success, to arrive at the claimed method given the disclosures of Key, Chauhan, Sweeney, McKinney for several reasons. PO Resp. 51–59. Patent Owner’s reasons have been addressed above where we discuss each claim 8 limitation individually. For example, Patent Owner argues that no motivation has been presented because the references do not teach the “technology” of the “fire hydrant management software.” *Id.* at 51; discussed at 52–54. We addressed this at II.E.1.[8a]. *See also id.* at 54–55 (discussing selecting an inspector; addressed at II.E.1.[8f]); 55–57 (notice to an approval authority of an impending inspection; addressed at II.E.1.[8c]); 57–58 (notice to an asset owner of an upcoming inspection; addressed at II.E.1.[8d]); 58–59 (qualified inspectors proximate to the asset; addressed at II.E.1.[8f]).

We have considered all of Patent Owner’s arguments. Based on the totality of the evidence, Petitioner sufficiently shows on this record the combination of Key, Chauhan, Sweeney, and McKinney renders obvious the claimed method with a reasonable expectation of success.

3. Conclusion as to Claim 8

Accordingly, for the relevant reasons discussed with respect to claim 8, and taking into account alleged objective indicia of nonobviousness discussed below in section II.F., we find a preponderance of the evidence supports Petitioner’s position that the combination of Key, Chauhan, Sweeney, and McKinney discloses or suggests the claimed subject matter and Petitioner has articulated a sufficient rationale for combining the

teachings of the references with a reasonable expectation of success in arriving at the claimed subject matter.

4. Claims 9–16

Building on Petitioner’s position with respect to independent claim 8, discussed above, Petitioner argues that dependent claims 9–16 are obvious over the combination of Key, Chauhan, Sweeney, and McKinney. Pet. 67–77.

Patent Owner does not provide any specific arguments as to these claims. *See generally* PO Resp.

For the relevant reasons discussed with respect to claim 8 and based on Petitioner’s arguments for each of the dependent claims, and taking into account alleged objective indicia of nonobviousness discussed below in section II.F., we find a preponderance of the evidence supports Petitioner’s position that the combination of Key, Chauhan, Sweeney, and McKinney discloses or suggests the subject matter of claims 9–16 and Petitioner has articulated a sufficient rationale for combining the teachings of the references with a reasonable expectation of success in arriving at the subject matter of each of claims 9–16. *See* Pet. 67–77.

E. Objective Indicia of Nonobviousness

Before we make a final obviousness determination, we must consider the evidence of obviousness in light of any evidence of secondary considerations of nonobviousness presented by Patent Owner. *See Graham*, 383 U.S. at 17–18 (“Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject

matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.”); *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012) (“This objective evidence must be ‘considered as part of all the evidence, not just when the decisionmaker remains in doubt after reviewing the art.’” (quoting *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538–39 (Fed. Cir. 1983))).

Patent Owner argues that a nexus exists in this case, and that unexpected results, commercial success, long-felt but unresolved need, copying by others, and licensing, demonstrate the nonobviousness of the challenged claims. PO Resp. 59–67; PO Sur-reply 22–25. Petitioner disagrees. Pet. Reply 24–26.

1. Nexus

Patent Owner contends that a presumption of nexus applies here. PO Resp. 61–63.

Patent Owner relies on the Moren (Ex. 2015) and McNulty (Ex. 2016) declarations and two claim charts: “Challenged Claims Mapped to Tegrifire™” (Ex. 2018, “Tegrifire”) and “Exhibit 2 Exemplary Infringement Claim Chart” (Ex. 2019, “Brycer”). The source of Ex. 2018 is unclear. Ex. 2019 appears to be part of the district court action. *See* Ex. 2019 (“Case: 1:23-cv-07744 Document #: 1–2 Filed: 09/07/23” is indicated in the top margin of each page).

Patent Owner states that “[t]he Tegrifire and Brycer’s TCE service offerings embody the claimed features and are coextensive with them.” PO Resp. 61. Then, relying on Exhibits 2015, 2016, 2018 and 2019, Patent

Owner maps each of the claim 8 limitations to the Tegrifire and Brycer products. *Id.* at 61–63.

Petitioner replies that “PO has failed to show either PO’s or Petitioner’s system practices any claim.” Pet. Reply 19 (citing *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1328 (Fed. Cir. 2008); *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1372–73 (Fed. Cir. 2019)). Petitioner points out that PO provides “claim charts (EX2018; EX2019) [that] largely parrot the claim and rely upon screenshots. Its declarants follow suit, referring to the charts, without additional analysis.” *Id.* (citing, *inter alia*, Ex. 2015 ¶¶ 67–88; Ex. 2016 ¶¶ 26–47; Ex. 2017 ¶¶ 28–48). Petitioner analyzes a number of claim limitations and explains how “the charts affirmatively show the systems do not practice any claims.” *Id.* at 20–24 (emphasis omitted).

Patent Owner responds that Petitioner’s argument is “based, not on any evidence of record, but only on Petitioners’ erroneous interpretation of claim 8, which is not limited to fire hydrants alone.” PO Sur-reply 22 (citing Pet. Reply 10–11). Also, Petitioner’s argument “is belied by the declaration of Andrew Moren [(Ex. 2015)], one of the named inventors, who demonstrated that each element of claim 8 is met by the parties’ respective software.” *Id.* (citing Ex. 2015 ¶¶ 67–88; Ex. 2018; Ex. 2019).

“The presumption [of nexus] applies ‘when the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’”

TalexMedical, LLC v. Becon Medical Limited, 2022 WL 2898934, at *8 (Fed. Cir. July 22, 2022) (citing *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882

F.3d 1056, 1072 (Fed. Cir. 2018) (*quoting Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000)).

The difficulty with the claim charts, as with Mr. Moren’s testimony, is that they fail to establish that Tegrifire and Brycer products embody and are coextensive with the claims.

The claim charts purport to show on a claim-by-claim and element-by-element basis that the Tegrifire and Brycer products embody each and every element of the challenged claims. Ex. 2018, 1–34; Ex. 2019, 1–30. But it is plainly evident from the images of the selected Tegrifire and Brycer products that many limitations are insufficiently shown in the screenshots of the Tegrifire and Brycer products. For example, the claim calls for a “fire hydrant management software” ([8a]). Patent Owner provides screenshots of what appear to be webpages. Ex. 2018, 2 (depicting a registration page); Ex. 2019, 1–2 (depicting informational pages). How these show a “fire hydrant management software” is not explained. For the “database” ([8h]), Patent Owner provides screenshots of a spreadsheet on a dashboard and input pages. Ex. 2018, 17; Ex. 2019, 25–29. Mr. Moren’s testimony is not helpful. He simply repeats Patent Owner’s argument without explaining how the screenshots embody the claim limitations. Ex. 2015 ¶¶ 67–88.

Accordingly, we do not apply a presumption of nexus that the ’966 patent’s claims are linked to the objective indicia of nonobviousness, because Patent Owner has not shown that Tegrifire and Brycer products embody and are coextensive with the claims.

Nexus may still be shown if the evidence of secondary considerations is the direct result of the unique characteristics of the claimed invention. *See*

Fox Factory, 944 F.3d at 1373–74 (“[T]he patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is *the direct result of the unique characteristics of the claimed invention.*” (emphasis added)). However, for the following reasons, that, too, has not been sufficiently established.

2. *Unexpected Results*

Regarding unexpected results, Patent Owner relies on two case studies, one of Lynwood, WA Fire Department (Ex. 2004) and the other of Richland, WA Fire Department (Ex. 2025). According to Patent Owner a number of benefits were seen from using the Tegrifire product, such as the number of licensed inspectors increased. Ex. 2004 (9 (“147.5%”)); Ex. 2025 (9 (“200%”). Other improvements were seen in the decreased number of impaired assets and in the increased communication between owners and inspectors. PO Resp. 63–64 (citing Ex. 2004, 9–11; Ex. 2015 ¶ 128; Ex. 2025; Ex. 2015 ¶ 155).

But there is insufficient evidence suggesting that any of these unexpected results was directly related to the claimed method. Patent Owner provides no discussion about how the unexpected results are “*the direct result of the unique characteristics of the claimed invention.*” *Fox Factory*, 944 F.3d at 1373–74 (emphasis added). The case studies at best support an assertion that the Tegrifire product facilitates greater compliance and cooperation. But a greater urgency on the part of the fire departments may also be a factor. *See, e.g.*, Ex. 2004, 4 (“[The Lynwood Fire Marshall] was looking for a solution that could help the department maintain their fire prevention activities regardless of their budgeted

resources.”). A nexus between the unexpected results and the claims of the ‘966 patent has not been sufficiently shown.

3. *Commercial Success*

Patent Owner contends that “[o]ver the last decade, over 1,000 municipalities in 50 states have adopted the methods disclosed and claimed in the ‘966 Patent.” PO Resp. 64 (citing Ex. 2015 ¶ 90 (relying on Ex. 2040)). According to Patent Owner, the “case studies reinforce the commercial success” of the Tegrifire product. *Id.* at 65 (citing Ex. 2015 ¶¶ 90–91).

There is no analysis explaining why any apparent commercial success was directly attributable to the method as claimed and not one of the many other factors that could facilitate greater compliance, such as a desire of a fire department to make compliance a priority.

“When a patentee can demonstrate commercial success, usually shown by significant sales in a relevant market, and that the successful product is the invention disclosed and claimed in the patent, it is presumed that the commercial success is due to the patented invention.” *J.T. Eaton & Co. v. Atl. Paste & Glue Co.*, 106 F.3d 1563, 1571 (Fed. Cir. 1997); *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1329 (Fed. Cir. 2016). “[I]f the unclaimed features amount to nothing more than additional insignificant features, presuming nexus may nevertheless be appropriate. Put differently, the degree of correspondence between a product and a patent claim falls along a spectrum.” *Fox Factory*, 944 F.3d at 1374. To establish a proper nexus between a claimed invention and the commercial success of a product, a patent owner must offer proof that the sales were a direct result of the unique characteristics of the claimed invention, and not a result of economic

and commercial factors unrelated to the quality of the patented subject matter. *In re Applied Materials, Inc.*, 692 F.3d 1289, 1299–1300 (Fed. Cir. 2012).

The burden is on Patent Owner to offer proof that the asserted commercial success is a direct result of the unique characteristics of the claimed invention. That has not been done here. All we are provided are statements that the Tegrifire product has been used and, *inter alia*, improvements in compliance have been shown.

We have reviewed the evidence. From the evidence submitted in this case, we are aware of no way to determine how much if any commercial success stems from the method claimed, as opposed to, for example, other enforcement-related factors.

Thus, we determine that the evidence of record fails to show that the commercial success is attributable to what is claimed in the challenged claims of the '966 patent.

4. Long-Felt but Unresolved Need

Establishing long-felt need requires objective evidence that an art-recognized problem existed in the art for a long period of time without solution. *Newell Cos. v. Kenney Mfg. Co.*, 864 F.2d 757, 768 (Fed. Cir. 1988); *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1379 (Fed. Cir. 1983). Establishing long-felt need also requires objective evidence that the invention satisfies the long-felt need. *In re Cavanagh*, 436 F.2d 491, 496 (CCPA 1971).

In that regard, Patent Owner contends, *inter alia*, that there “[n]o prior art services offerings had any system in the fire and life safety industry.” PO Resp. 65–66 (citing Ex. 2015 ¶ 191). “Without assistance from Tegrifire,

home-grown programs required significant resources to enforce compliance.” *Id.* at 66.

However, as Patent Owner states, “[t]he fundamental problem for ITM compliance was enforcement.” PO Resp. 65 (citing Ex. 2015 ¶ 191; Ex. 2016 ¶ 49). Without enforcement, there would be no need for a municipality to implement the Tegrifire product.

Patent Owner does not meet its burden to offer proof that the long-felt but unresolved need for compliance is a direct result of the unique characteristics of the claimed invention rather than, for example, a municipality’s enforcement efforts.

5. *Copying*

Patent Owner argues, *inter alia*, “Brycer has had great success gaining adoption of its methods covered by the Claims with major cities.” PO Resp. 67 (citing Ex. 2015 ¶ 206).

We have reviewed the testimony of Mr. Moren but do not see any evidence of copying. Mr. Moren testifies that he disclosed “Tegris” inventions as disclosed and claimed in the ‘966 Patent to the NFSA [“National Fire Sprinkler Association”].” Ex. 2015 ¶ 206. “NFSA told me it intended to partner with a competitor.” *Id.* The fact that NFSA received information from Tegrifire and then partnered with a competitor does not sufficiently show that the competitor copied the method the claims of the ‘966 patent.

6. *Licensing*

Patent Owner states that BuildingReports.com “is in the process of licensing the ‘966 Patent from Tegrifire. It is expected that this license will be

finalized on or about April 17, 2024.” PO Resp. 67 (citing Ex. 2015 ¶ 197 (saying the same)).

We are not provided sufficient information about the license to evaluate its strength as objective evidence of nonobviousness.

7. Conclusion

For the reasons discussed, we find a preponderance of the evidence supports Petitioner’s position that the combination of Key, Chauhan, Sweeney, and McKinney discloses or suggests the subject matter of claims 8–16, and that Petitioner has articulated a sufficient rationale for combining the teachings of the references with a reasonable expectation of success in arriving at the subject matter of the claims.

We have reviewed Petitioner’s obviousness ground, including proffered evidence, and Patent Owner’s arguments and proffered evidence, including evidence of objective indicia, in determining that claims 8–16 as challenged under Ground I are unpatentable by a preponderance of the evidence.

On balance, in view of the strength of the evidence in favor of obviousness for each of claims 8–16, and the deficiencies in the evidence relied on as supporting the contended objective indicia of nonobviousness, we determine that Petitioner has established by a preponderance of the evidence that the subject matter of claims 8–16 is unpatentable.

III. PATENT OWNER’S MOTION TO EXCLUDE

“Generally, the Board waits until after the oral hearing, when it reviews the record in its entirety, to decide the merits of any motions to exclude. In the Board’s experience, consideration of the objected-to

evidence is often unnecessary to resolve the patentability of the challenged claims, and the motion to exclude is moot.” Consolidated Trial Practice Guide³ 79–80.

Patent Owner filed a Motion to Exclude the entirety of the MacInnes Declaration or alternatively give it no weight. Paper 33 (“Mot. Excl.”); Ex. 1003. Petitioner filed an Opposition (Paper 34, “Opp. Mot. Excl.”) and Patent Owner filed a Reply (Paper 35, “Reply Mot. Excl.”).

Patent Owner states that it objected to the MacInnes Declaration on February 7, 2024, ten days after trial was instituted (January 24, 2024) pursuant to 37 C.F.R. § 42.64(b). Mot. Excl. 1; Paper 11; DI. This is not disputed. *See generally* Opp. Mot. Excl.

Patent Owner seeks to exclude the MacInnes Declaration (Ex. 1003) based on statements made by Mr. MacInnes during his deposition (Ex. 2021). According to Patent Owner, the statements he made show that Mr. MacInnes’s opinions set forth in his declaration are, *inter alia*, “not supported by sufficiently disclosed facts or data, do not reflect the application of reliable principals or methods of analysis, are unreliable, and/or do not bear on any relevant issues in this case and their probative value, if any, is outweighed by the risk of unfair prejudice and confusion.” Mot. Excl. 5.

We address each deposition statement at issue in the order they are raised in the Motion to Exclude. For the following reasons, we are

³ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

unpersuaded that the statements necessitate excluding the entirety of the MacInnes Declaration or alternatively give it no weight.

Ex. 2021, page 25

Patent Owner argues that, based on statements made on page 25 of Ex. 2021, Mr. MacInnes “has no experience inspecting fire hydrants or related life safety systems.” Mot. Excl. 1 (citing Ex. 2021, p. 25); *see also id.* at 6.

Mr. MacInnes testified at his deposition that prior to this case, he “had never performed any other work as a business consultant, or otherwise related to monitoring the inspection of fire hydrants or related equipment” (EX2021 at 15:19–23), “had no personal experience managing fire hydrants” (*Id.* at 25:15–18) and “did not personally use the software that was used to manage fire hydrants.” (*Id.* at 25:19–22).

Id. at 8; *see also* discussion under “B. MacInnes Is Not Qualified to Opine.” Mot. Excl. 8 (citing Ex. 2021, 15:19–23, 25:15–18, 25:19–22).

Given said statements, Patent Owner argues that “Mr. MacInnes does not have the qualifications of an expert or even of a POSA as of 2007 . . . he is not qualified to opine on what a POSA would have known or believed at that time.” Mot. Excl. 8.

As an initial matter, there is no requirement for a perfect match between an expert’s experience and the field of the patent. *SEB S.A. v. Montgomery Ward & Co.*, 594 F.3d 1360, 1372–73 (Fed. Cir. 2010). “To offer expert testimony from the perspective of a skilled artisan in a patent case—like for claim construction, validity, or infringement—a witness must at least have ordinary skill in the art.” *Kyocera Senco Industrial Tools Inc. v. International Trade Commission*, 22 F.4th 1369, 1376–77 (Fed. Cir.

2022). That being said, it is unnecessary to evaluate whether Mr. MacInnes has experience inspecting fire hydrants or related life safety systems because, based on our construction of “fire hydrant management software” as management software that processes information about fire hydrant assets, it would be unnecessary for a POSA in the art pertinent to the claimed subject matter (i.e., management software that processes information about fire hydrant assets) to have additional knowledge and experience with fire hydrants.” *Supra* § I.B; *see supra* § II.C.4. It is sufficient that Mr. MacInnes has “at least a B.S. in engineering or a related field, and would have had at least two years of experience designing and/or developing asset management and compliance systems for a regulated asset or system of assets.” *Supra* § II.B (quoting Petitioner’s proposed definition for the level of ordinary skill in the art by a POSA at the time the invention was made (Pet. 6), which we have adopted for our analysis), which he appears to have. *See* Ex. 1004.

Ex. 2021, pages 46–49

Patent Owner argues that, based on statements made on pages 46–49 of Ex. 2021, Mr. MacInnes “has no knowledge of the regulations or codes applicable to the inspection and maintenance of such devices.” Mot. Excl. 1 (citing Ex. 2021, pp. 46–49); *see also id.* at 6.

It is unnecessary for us to evaluate whether Mr. MacInnes has knowledge about the regulations or codes applicable to the inspection and maintenance of assets because the claims are not limited to inspecting and maintaining assets based on regulations or codes. The claims broadly call

for inspection information and a compliance report but the standard against which they are ascertained is unstated.

Ex. 2021, pages 33–38

Patent Owner argues that, based on statements made on pages 33–38 of Ex. 2021, Mr. MacInnes “did not conduct any investigation into the inspection and maintenance of fire hydrants and related systems as of 2007, he did not interview any POSA, and he has no knowledge of the typical methods or software used at that time.” Mot. Excl. 1–2 (citing Ex. 2021, pp. 33–38).

For the same reason discussed above with respect to the argument based on Ex. 2021, page 25, it is unnecessary for us to evaluate whether Mr. MacInnes conduct any investigation into the inspection and maintenance of fire hydrants in order to determine whether he has the qualifications of an expert or a POSA in the pertinent art.

Ex. 2021, pages 33–37

Patent Owner argues that, based on statements made on pages 33–37 of Ex. 2021, Mr. MacInnes “did not interview Petitioners, conferring only with counsel, he has no knowledge of the parties’ respective products or their commercial success, and he did not investigate Patent Owner’s allegation that Petitioners copied Patent Owner’s product.” Mot. Excl. 2 (citing Ex. 2021, pp. 33–37).

In the section “E. MacInnes Failed to Properly Apply the Prior Art to the Claims,” Patent Owner similarly argues that Mr. MacInnes did not consider indicia regarding copying, notwithstanding “he declares that he

is ‘not aware’ of any indicia of nonobviousness, when the truth is that he buried his head in the sand performing no investigation.” Mot. Excl. 12 (discussing Ex. 2021, 91:16–21, 92:2–9; Ex. 1003 ¶ 21).

We have not relied Mr. MacInnes’s testimony in analyzing the objective indicia of nonobviousness. *See supra* § II.F.

Ex. 2021, pages 33

Patent Owner argues that, based on statements made on page 33 of Ex. 2021, Mr. MacInnes “did not conduct any investigation to identify prior art, relying entirely on the references provided by counsel for Petitioners.” Mot. Excl. 2 (citing Ex. 2021, p. 33).

Patent Owner does not sufficiently explain why it is necessary for Mr. MacInnes to have conducted an investigation to identify prior art, without which his declaration should be excluded.

Ex. 2021, pages 39–42

Patent Owner argues that, based on statements made on pages 39–42 of Ex. 2021, Mr. MacInnes “did not write or revise the analyses or opinions of the prior art as set forth in his declaration, accepting without revision the first draft thereof as prepared by counsel for Petitioners.” Mot. Excl. 2 (citing Ex. 2021, pp. 39–42). *See also* “D. MacInnes Did Not Properly Review and Consider the Prior Art Analyses Prepared by Counsel.” *Id.* at 10–11 (discussing Ex. 2021, 42:1–21; citing Ex. 1003 ¶¶ 69–70, 73, 103, 106–150, and 158–165, 167, 171–177, 179–183, 185, 187–188, 191–194, 196–198, 200, 203, 209–210, 215–217, 221–223, 226, 230, 234–236, 238–241, 243–244, 247–256; Prelim. Resp. 16–18, 28–29).

Patent Owner does not sufficiently explain why it was necessary for Mr. MacInnes to have written or revised the analyses or opinions of the prior art as set forth in his declaration. According to the declaration, “[t]his declaration summarizes the opinions [Mr. MacInnes] has formed to date.” Ex. 1003 ¶ 6. There is insufficient evidence that the statements made in the declaration about the prior art do not summarize Mr. MacInnes’s opinion of the prior art. Moreover, it is not entirely clear that Mr. MacInnes did *not* write or revise the analyses or opinions of the prior art as set forth in his declaration. Mr. MacInnes testified that “[i]t was a combination of drafting on both sides [i.e., Petitioner’s counsel and Mr. MacInnes].” Ex. 2021, 40:2–3. He did not testify that the statements made in the declaration about the prior art were solely that of Petitioner’s counsel.

We also do not understand the difficulty with accepting a *first* draft prepared by counsel for Petitioners without revision. Assuming that is true, which is doubtful given Mr. MacInnes’s testimony that he was involved with drafting, there is insufficient evidence that the statements made in the declaration about the prior art refer only to those from a first draft prepared solely by Petitioner’s counsel.

Ex. 2021, pages 9–11, 15

Patent Owner argues that, based on statements made on pages 9–11 and 15 of Ex. 2021, Mr. MacInnes “never opined in a patent matter outside of this proceeding or applied for a patent.” Mot. Excl. 2 (citing Ex. 2021, pp. 9–11, 15).

Patent Owner does not sufficiently explain why it was necessary for Mr. MacInnes to have opined in a patent matter outside of this proceeding or applied for a patent.

Ex. 2021, page 75

Patent Owner argues that, based on statements made on page 75 of Ex. 2021, Mr. MacInnes made “several false, material statements . . . under oath, attesting that he reviewed and considered the prosecution history of the challenged patent, when he did not.” Mot. Excl. 2 (citing Ex. 2021, p. 75; Ex. 1003 ¶¶ 18, 48–49, 66–68). According to Patent Owner, “Mr. MacInnes attests several times in his declaration that he reviewed and considered the prosecution history of the Challenged Patent, then admitted under cross-examination that he did not.” *Id.* at 6 (citing Ex. 2021, p. 75; Ex. 1003 ¶¶ 18, 48–49, 66–68); *see also* discussion under “C. MacInnes Admitted That He Did Not Review Prosecution History, Notwithstanding Several Sworn Statements That He Did.” *Id.* at 9 (discussing Ex. 2021, 75:14–19, 41:16–25)

We have not discussed the prosecution history of the challenged patent and therefore have not relied Mr. MacInnes’s testimony about the prosecution history of the challenged patent.

Ex. 2021, pages 11, 116–117

Patent Owner argues that, based on statements made on pages 11 and 116–117 of Ex. 2021, Mr. MacInnes’s declaration contains errors but Mr. MacInnes “could not recall where they are or what they relate to.” Mot. Excl. 2 (citing Ex. 2021, pp. 11, 116–117); *see also id.* at 6 (citing Ex. 2021, pp. 11, 116–117)

Without knowing what the errors are, we are not in a position to determine whether an alleged error affects our ability to resolve the patentability of the challenged claims.

Ex. 2021, pages 125–126

Patent Owner argues that, based on statements made on pages 125–126 of Ex. 2021, Mr. MacInnes made “was retained as an expert in one other case, and his opinions were excluded in part for being unreliable and inadmissible.” Mot. Excl. 2–3 (citing Ex. 2021, pp. 125–126; Ex. 2014, page 4).

We do not see the relevance of the “other case” (Ex. 2014) which has nothing to do with the patentability of the claims in the ’966 patent here being challenged.

Ex. 2021, 29:6–15

According to Patent Owner, “[a]t paragraphs 50–69 of EX1003, there is an alleged analysis of the provisional applications from which the ‘966 Patent claims priority and a conclusion that the claims at issue in this IPR should not benefit from such priority.” Mot. Excl. 13 (citing Ex. 1003 ¶¶ 50–69). Patent Owner argues that, based on a statement at 29:6–15 of Ex. 2021, paragraphs 50–69 of Ex. 1003 “reflect attorney argument and not the analysis and opinions of Mr. MacInnes.” *Id.* (citing Ex. 2021, 29:6–15; Ex. 1003 ¶¶ 50–69).

We have not discussed the provisional applications from which the ‘966 patent claims priority and therefore have not relied Mr. MacInnes’s testimony about said priority.

For the foregoing reasons, the Motion to Exclude is denied.

IV. CONCLUSION

For the foregoing reasons, Petitioner has proven by a preponderance of the evidence that the challenged claims of the '966 patent are unpatentable, as summarized in the following table:

Claims	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
8–16	103	Key, Chauhan, Sweeney, McKinney	8–16	
Overall Outcome			8–16	

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 8–16 of the '966 patent have been proven to be *unpatentable*;

FURTHER ORDERED that Patent Owner's Motion to Exclude (Paper 36) is *denied*; and

FURTHER ORDERED that because this is a Final Written Decision, parties to this proceeding seeking judicial review of the Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

PETITIONER:

Matt Berkowitz
Patrick Colsher
Khue Hoang
REICHMAN JORGENSEN LEHMAN & FELDBERG LLP
mberkowitz@reichmanjorgensen.com
pcolsher@reichmanjorgensen.com
khoang@reichmanjorgensen.com

PATENT OWNER:

Chris Perque
John Boyd
Richard Lehrer
FRISHERBROYLES LLP
chris.perque@fisherbroyles.com
john.boyd@fisherbroyles.com
richard.lehrer@fisherbroyles.com