

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ROOFR INC.,
Petitioner

v.

PICTOMETRY INTERNATIONAL CORP.,
Patent Owner

Case IPR2023-00435
U.S. Patent No. 10,648,800

**PATENT OWNER RESPONSE
UNDER 37 C.F.R. § 42.120**

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Patent Trial and Appeal Board
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PATENT OWNER'S UPDATED EXHIBIT LIST

Exhibit	Description
2001	<i>Intentionally Left Blank</i>
2002	<i>Intentionally Left Blank</i>
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2012	<i>Intentionally Left Blank</i>
2013	<i>Intentionally Left Blank</i>
2014	Microsoft Word Comparison Petition to Cummings Declaration
2015	<i>Intentionally Left Blank</i>
2016	<i>Intentionally Left Blank</i>
2017	<i>Intentionally Left Blank</i>
2018	<i>Intentionally Left Blank</i>
2019	<i>Intentionally Left Blank</i>
2020	<i>Intentionally Left Blank</i>
2021	U.S. Patent No. 8,417,061 to Kennedy et al.
2022	Prosecution History of U.S. Appl. No. 12/470,984 (now U.S. Patent No. 8,401,222)
2023	Prosecution History of U.S. Appl. No. 13/774,478 (now U.S. Patent No. 8,542,880)
2024	Prosecution History of U.S. Appl. No. 13/786,699 (now U.S. Patent No. 9,329,749)

Exhibit	Description
2025	Prosecution History of U.S. Appl. No. 14/018,943 (now U.S. Patent No. 9,244,589)
2026	Prosecution History of U.S. Appl. No. 15/005,977 (now U.S. Patent No. 9,933,254)
2027	Prosecution History of U.S. Appl. No. 15/943,337 (now U.S. Patent No. 10,197,391)
2028	PRWeb, “EagleView Technology Corporation President and CEO Chris Barrow Named EY Entrepreneur Of The Year® 2015 for the Pacific Northwest,” published June 18, 2015
2029	May 23, 2023 Email from Roofr’s Counsel to the Board in IPR2023-00435, -00436, and -00437
2030	May 23, 2023 Email from Patent Owner’s Counsel to the Board regarding Roofr’s requested reply to the POPRs in IPR2023-00435, -00436, and -00437
2031	Declaration of Chandrajit Bajaj, Ph.D. in Support of Patent Owner’s Response
2032	Deposition Transcript of Tony L. Cummings (November 17, 2023)
2033	RSMeans Illustrated Construction Dictionary, 4 th Edition, 2010
2034	SoftPlan Architectural Design Software, accessible at https://ww2.softplan.com/?page_id=500 (last accessed November 22, 2023)
2035	PlanSwift by ConstructConnect, accessible at https://www.planswift.com (last accessed November 22, 2023)
2036	<i>Curriculum Vitae</i> of Chandrajit Bajaj, Ph.D.

I. INTRODUCTION

Petitioner fails to meet its burden of proving that any challenged claim of U.S. Patent No. 10,648,800 (“the ’800 patent”) is unpatentable. The Board should, thus, confirm patentability of the challenged claims.

In each of Petitioner’s Grounds of Unpatentability, Petitioner relies on Abhyanker (Exhibit 1005) to address claim elements 1f, 11f, and 17d, focusing its analysis on claim element 1f, which recites:

responsive to receiving the designation of the building roof structure location, providing a second computer input capable of signaling user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location.

EX1001, 14:20-26.

As seen above, the “second computer input” has (1) a temporal aspect: it is provided “responsive to receiving the designation of the building roof structure location” and (2) a functional aspect: it is “capable of signaling user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location.”

Petitioner relies on two features of Abhyanker to address element 1f:

Abhyanker's "additional verifications" and Abhyanker's marker-locking feature.

Petitioner first incorrectly asserts that the marker-locking feature is an example of Abhyanker's additional verifications. Petitioner provides no support for this assertion, which is inconsistent with Abhyanker's teachings. Abhyanker's additional verifications and marking-locking feature are separate and unrelated features of Abhyanker's disclosure and they occur/are used at different steps (operations) in Abhyanker's disclosed process. There is simply nothing linking these two features.

Considered individually, neither Abhyanker's additional verifications nor Abhyanker's marker-locking feature satisfies the claimed "second computer input." Abhyanker's additional verifications fail to satisfy the functional aspect of the claimed "second computer input": that is, they are not computer input that is provided to the user and that enables the user to confirm the user's prior designation of the location of a building roof structure. And Abhyanker's marker-locking feature fails to satisfy both the temporal and functional aspects of the claimed "second computer input": that is, it is not provided in response to the claimed "designation" and it does not enable the user to confirm the user's prior designation of the location of a building roof structure.

Petitioner and its expert, Mr. Cummings, provide only superficial and conclusory analysis of these claim features, which is insufficient to prove that the

claims would have been obvious. Additionally, Mr. Cummings does not qualify as a person of ordinary skill in the art and his declaration testimony mirrors the conclusory arguments presented in the Petition, and thus the Board should not credit his testimony.

Petitioner additionally fails to correctly resolve the level of ordinary skill in the art, which taints all aspects of its obviousness challenges, and fails to prove that certain dependent claim features would have been obvious.

II. THE '800 PATENT

A. Overview

The '800 patent is generally directed to a computer-implemented “system and process for roof measurement using imagery.” EX1001, Title. Conventional aerial-imagery services come with limitations, such as inaccurate designations of a roof structure. EX1001, 1:27-33. To overcome these limitations, the '800 patent allows “for user acceptance of the final location of a roof structure,” which it describes and illustrates with respect to Figures 4A-4D. EX1001, 9:62-66.

The '800 patent explains that, “in FIG. 4A, computer screen 100 provides a place to enter an address, such as field 102 for address entry (denoted by label 101). ... The user may enter by clicking or otherwise button 103 to find that address.” EX1001, 9:66-10:5, FIG. 4A (reproduced below).

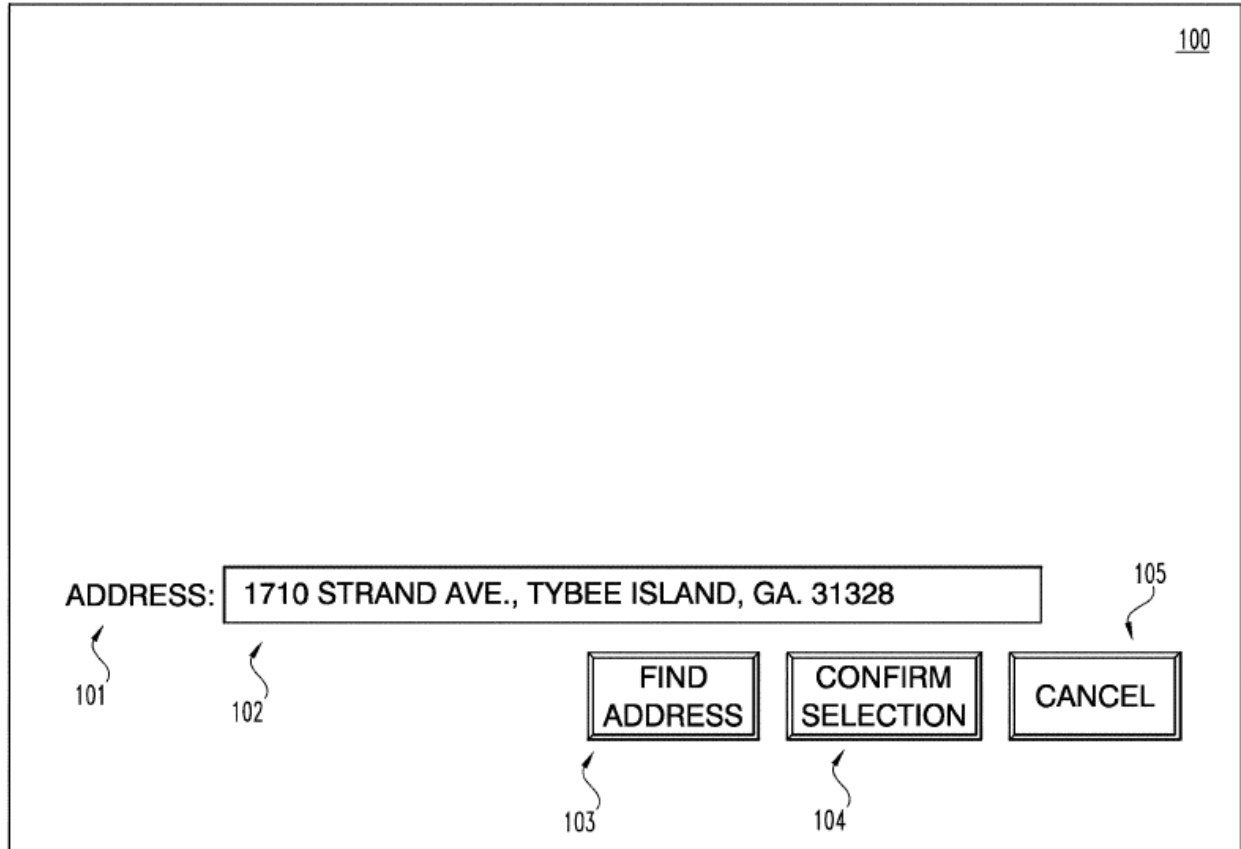


Fig. 4A

EX1001, FIG. 4A.

“In response, computer screen 100 may appear like FIG. 4B. As such, it may depict imagery 502 of a region, the region including building 500 with its roof structure 501. ... In FIG. 4B, marker 106a is shown in the region 502, corresponding to the street address in field 102. Note further that while marker 106a is close to roof structure 501, it does not directly or perfectly correspond to roof structure 501.” EX1001, 10:5-19, FIG. 4B (reproduced below).

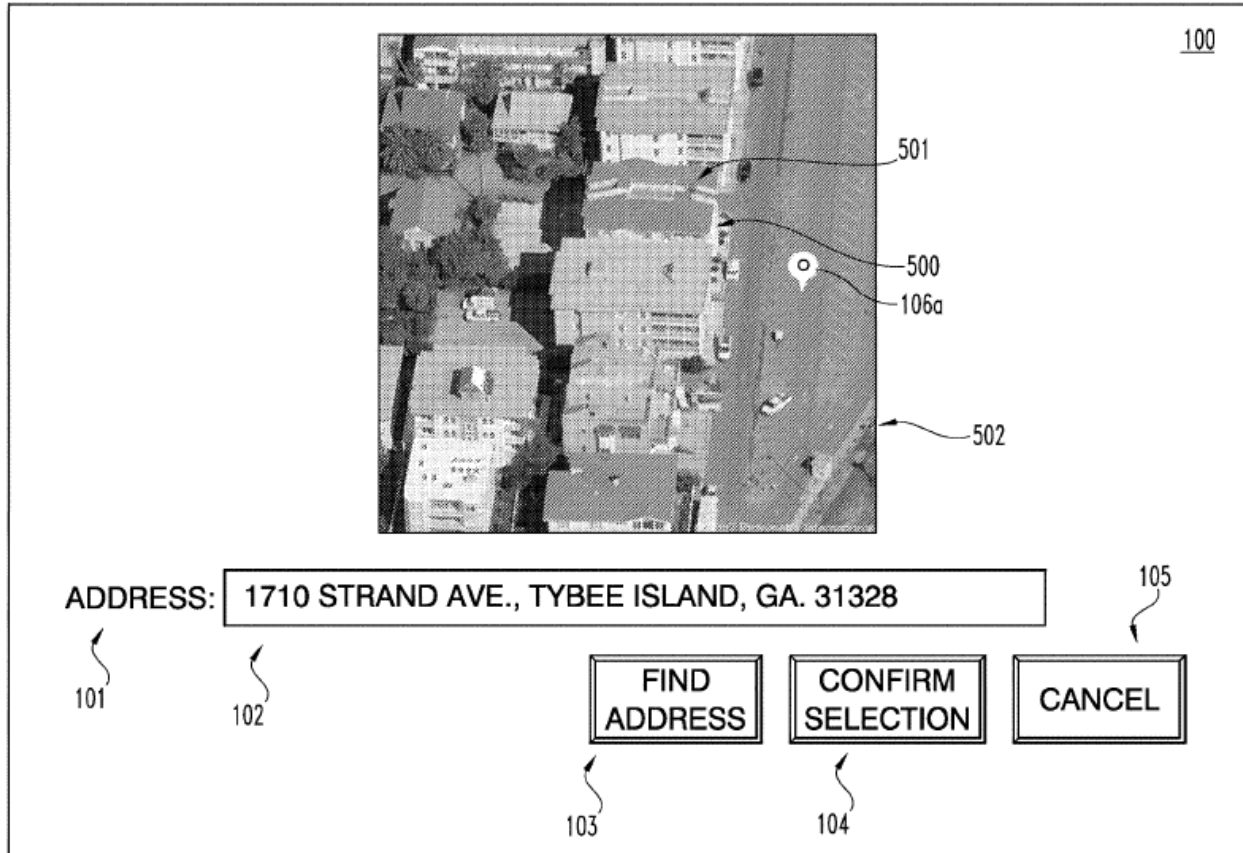


Fig. 4B

EX1001, FIG. 4B.

The '800 patent explains that, “[a]s such, the customer or other user may be allowed to move the marker (by click and dragging via computer mouse, arrows, or otherwise) to a final location 106b as depicted in FIG. 4C. Such final location is on top of the building 500 and such movement more precisely identifies the location of the building roof structure 501 to be measured.” EX1001, 10:19-25, FIG. 4C (reproduced below).

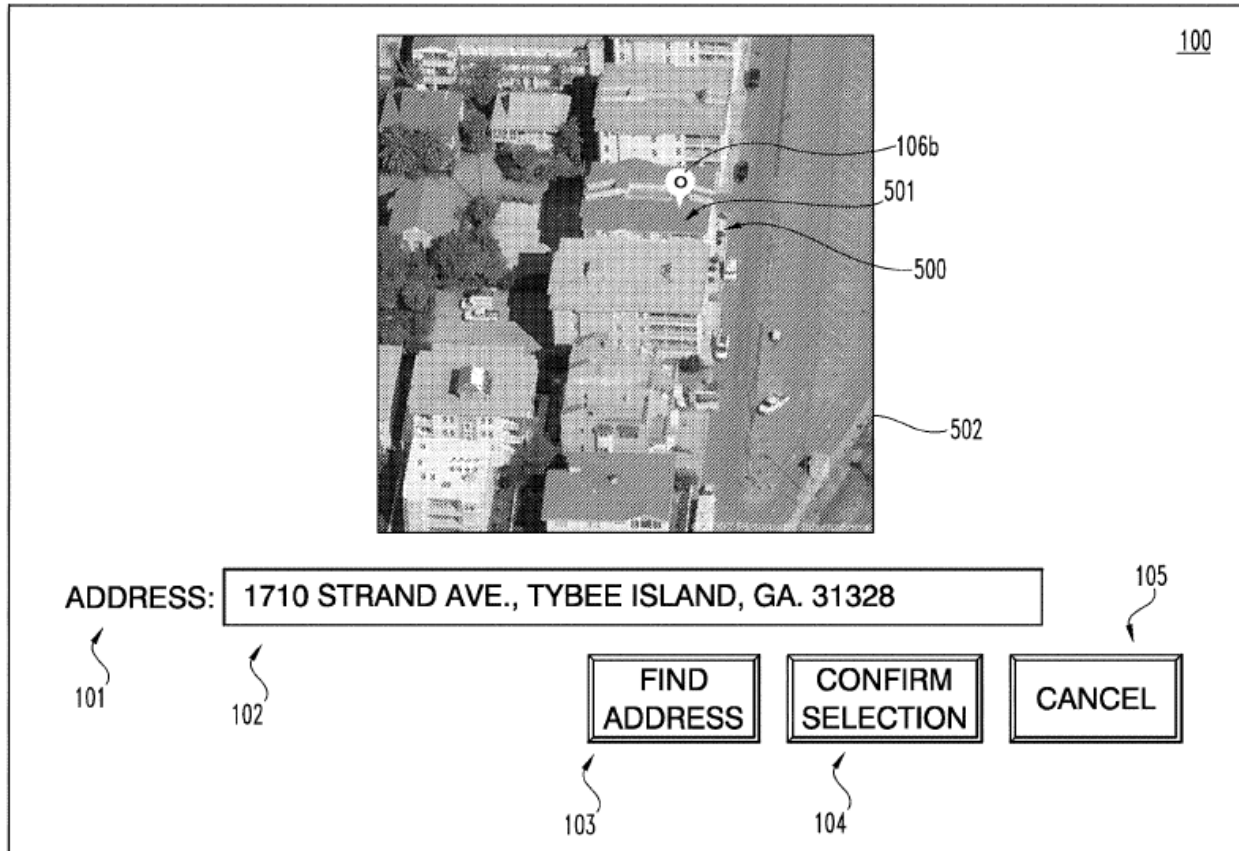


Fig. 4C

Next, “if confirmed selection button 104 or other such user acceptance is activated, another screen (and/or report) optionally may be provided, such as screen 100 as depicted in FIG. 4D.” EX1001, 10:30-33, FIG. 4D (reproduced below). In the user interface show in Figure 4D, “a checkbox may be providing a further reconfirmation that the users reviewed the image is correct.” EX1001, 10:37-38. The ’800 patent explains that, “[i]n this way, the end user/customer will be sure that when placing an order, the vendor is measuring the correct roof structure as opposed to, for example, measuring the nearby roof structure due to mistake/miscommunication.” EX1001, 10:38-42.

ADDRESS TO BE MEASURED:

1710 STRAND AVE.

CITY:

TYBEE ISLAND

STATE:

GA.

ZIP CODE

31328

NUMBER OF PLANES

RUSH PROCESSING

OPTIONAL:

REFERENCE NUMBER:

CLAIM NUMBER:

ADD TO CART

100

106b

502a

☒ I have reviewed the image and confirm my selection is correct.

LATITUDE REFERENCE:

38.7492

LONGITUDE REFERENCE:

-85.2748

Fig. 4D

EX1001, FIG. 4D.

B. Person of Ordinary Skill in the Art

A person of ordinary skill in the art (“POSITA” or “skilled artisan”) of the ’800 patent would have had a bachelor’s degree in an academic area emphasizing the design of electrical, computer, or software technologies, or a similar discipline, and at least two years of experience related to computerized image analysis and three-dimensional modeling. EX2031, ¶¶35-37; *see also* EX2031, ¶¶84-85.

While *some* experience may take the place of formal education, a person who merely had experience *using* computer-aided design (CAD) programs or

similar software at the time of the '800 patent would not have been POSITA.

EX2031, ¶¶39-40. The '800 patent describes and claims computer-implemented methods for measuring roof dimensions using aerial imagery that employ graphical user interface features (such as the claimed “first computer input” and “second computer input”). *See* EX1001, 1:19-21, claim 1. A mere user of CAD programs and similar software would not have had the skills to understand and implement in software the features of the claimed invention of the '800 patent. EX2031, ¶¶39-40.

III. GROUND 1: PETITIONER FAILS TO PROVE THAT CLAIMS 1-17 WERE OBVIOUS OVER PERSHING-789 AND ABHYANKER.

In Ground 1, Petitioner alleges claims 1-17 would have been obvious over the combination of Pershing-789 and Abhyanker. Pet., vii. The discussion below regarding independent claims 1, 11, and 17 focuses primarily on claim elements 1f, 11f, and 17d, which Petitioner relied on Abhyanker alone to address. Accordingly, Patent Owner first provides an overview of Abhyanker before addressing the merits of claim elements 1f, 11f, and 17d, which Abhyanker does not teach or suggest.

A. Overview of Abhyanker

Abhyanker is directed to a shared mapping environment in which multiple users can interact with markers on a map, including moving and claiming markers. EX1005, ¶¶3, 41, 48, 78 (describing registered and unregistered users), FIGS. 1,

4A. Abhyanker illustrates placement and movement of a marker in Figure 4A, reproduced below. Abhyanker explains:

FIG. 4A is a map view showing the placement of a marker in the mapping environment, according to one embodiment. Particularly, FIG. 4A illustrates an initial location 402A and a new location 404A, according to one embodiment. The initial location 402A may be the location of the marker in the mapping environment provided by the user. The new location 404A may be the location of the marker accurately relocated at the physical location associated with the address data in the mapping environment. In the example embodiment illustrated in FIG. 4A, the map view may enable the user to locate a marker in the mapping environment adjacent to the physical location identified through the address data. The marker may be automatically relocated to the physical location based on the initial location 402A.

EX1005, ¶78.

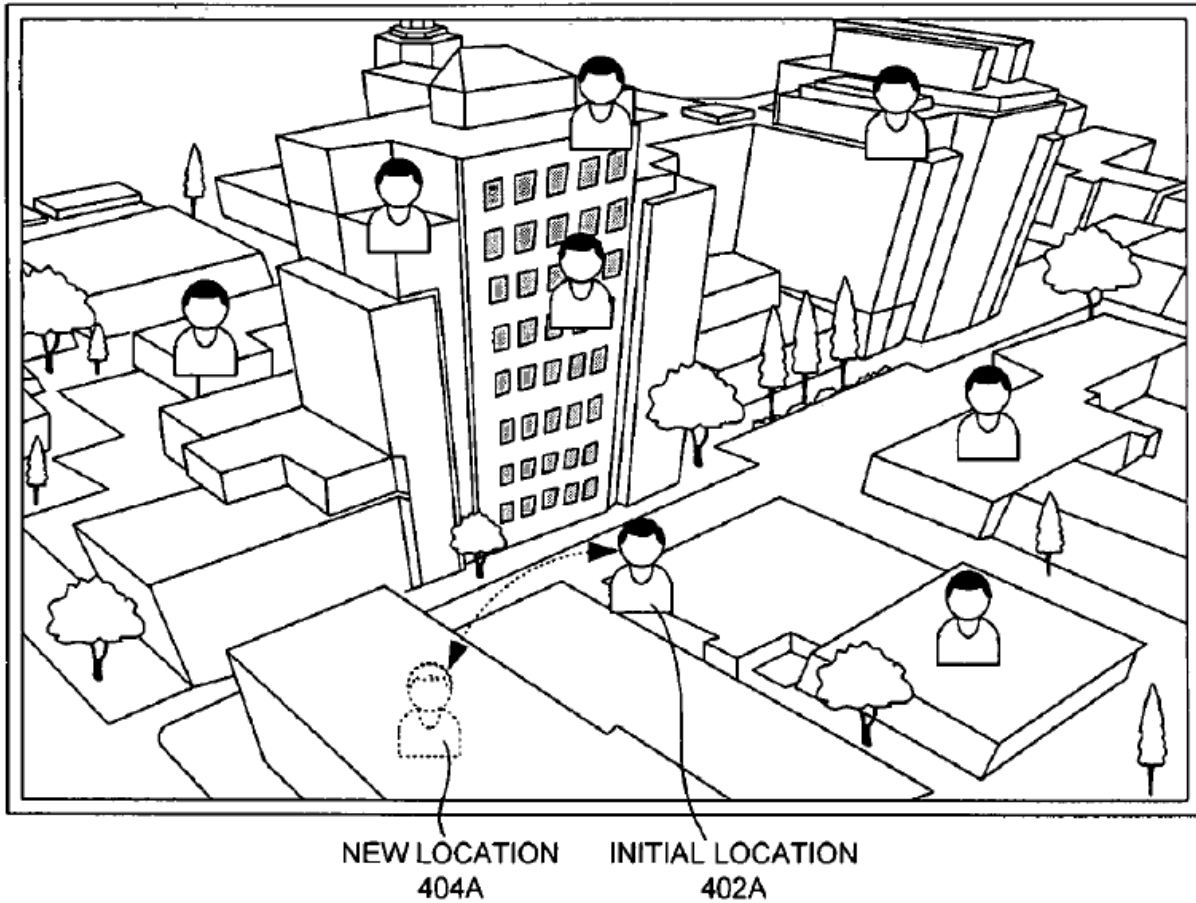


FIGURE 4A

EX1005, FIG. 4A.

In addition to moving a marker, users can claim the wiki profile associated with a marker using a marker-locking feature, which is shown (for example) as lock pushpin 908 in Figure 9, reproduced below. EX1005, ¶¶64, 99, FIG. 9.

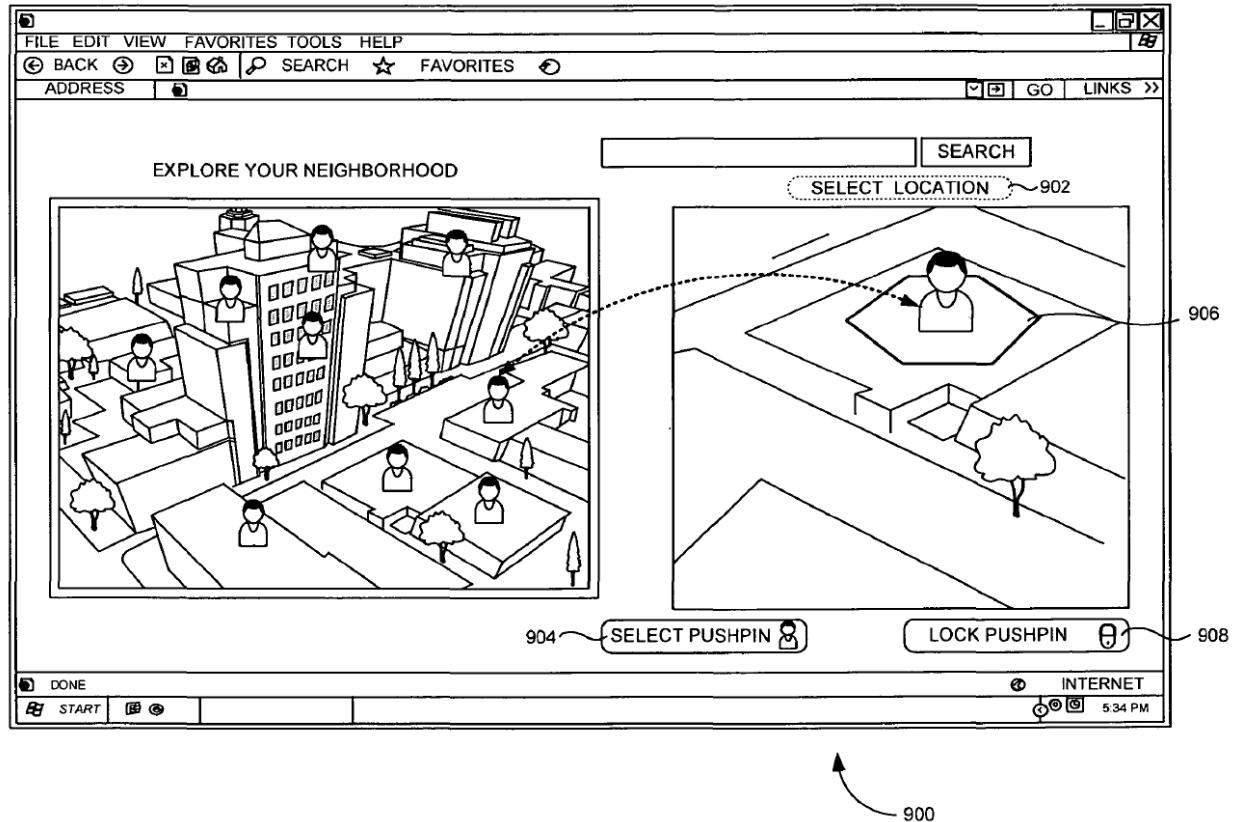


FIGURE 9

EX1005, FIG. 9.

Claiming such a wiki profile, Abhyanker explains, allows the user to control the information that is included in the profile and to prevent other users from relocating the marker to a different location. *See* EX1005, ¶¶58, 63-64, 66.

B. Independent claims 1 and 11 would not have been obvious.

Petitioner fails to prove that claims 1 and 11 would have been obvious over the combination of Pershing-789 and Abhyanker for two reasons: (1) Abhyanker fails to teach claim elements 1f and 11f; and (2) Petitioner fails to properly resolve the level of ordinary skill in the art.

1. Abhyanker fails to teach claim elements 1f and 11f.

Abhyanker fails to teach claim elements 1f and 11f, which recite:

responsive to receiving the designation of the building roof structure location, providing[/provides] *a second computer input* capable of signaling user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location.

EX1001, 14:20-26 (emphasis added).

Petitioner relies on its analysis of claim element 1f to address claim element 11f, Pet., 60; EX1003, ¶107, and thus Patent Owner’s analysis of claim element 1f below applies equally to claim element 11f.

Claim 1 is directed to a computer-implemented process. EX1001, claim 1; EX2031, ¶53; *see also* EX2032, 43:10-14. Claim element 1f recites “a second computer input” that (1) has a temporal requirement: it is provided “responsive to receiving the designation of the building roof structure location” and (2) has a functional requirement: it is “capable of signaling user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location.” EX1001, 14:20-26. The ’800 patent defines “computer input” as “data, information and/or signals provide by a computer user.

This may include numbers, words, mouse clicks, ‘enter’, check boxes, dialog boxes, and otherwise.” EX1001, 3:11-15.¹ And Figure 4D of the ’800 patent shows a non-limiting example of the claimed “second computer input” in which, after a user has designated the location of a roof, the computer provides a “checkbox” that enables the user to confirm the user’s prior designation of the location of the roof. EX1001, 10:30-42, FIG. 4D.

Accordingly, a skilled artisan would have understood that the claimed “second computer input” is a user interface element provided by the computer to the user in response to the user designating the location of a roof structure and that enables the user to confirm that its designation of the location of the roof structure is correct. EX2031, ¶¶34, 53; *see also* EX2032, 43:22-44:2 (Q. “So the computer provides the second input that is accepted by the user?” A. “Yes.”); Pet., 4; EX1003, ¶20 (acknowledging that the ’800 patent describes the second computer input as user confirmation via selecting a menu option or checking a box, which occurs after and in response to the user designating the location of the roof.).

Petitioner alleges that Abhyanker teaches element 1f. Pet., 33-35; EX1003, ¶¶62-65. Petitioner does not rely on Pershing-789 to address element 1f. Pet., 33-35; EX1003, ¶¶62-65. Specifically, Petitioner first maps Abhyanker’s drag-and-

¹ Mr. Cummings testified that he did not apply any definitions from the specification in reaching his opinions. EX2032, 39:3-18.

drop feature to the claimed “designation of the building roof structure location.”

Pet., 33-34; EX1003, ¶¶62-63; *see also* Pet., 33 (addressing element 1e, Petitioner stating that “[t]he selection of a roof location using the ‘drag and drop’ feature is the claimed ‘designation of the building roof structure within the first image.’”); EX1003, ¶61; EX2032, 81:8-85:1 (Mr. Cummings discussing his understanding of element 1f and his mapping of Abhyanker to element 1f).

Petitioner next maps Abhyanker’s “additional verifications,” described in paragraphs 11 and 53 of Abhyanker, to the claimed “second computer input.” Pet., 34-35; ¶¶64-66. Petitioner also alleges that Abhyanker’s “marker locking” feature, described in paragraph 64 of Abhyanker, is an example of Abhyanker’s “additional verifications.” Pet., 34; EX1003, ¶65; EX2032, 76:13-77:4; 81:8-85:1. Here, Mr. Cummings testified that Abhyanker’s lock pushpin option 908 shown in Figure 9 illustrates the user interface element that he is equating to the claimed “second computer input.” EX2032, 86:15-19.

Petitioner’s arguments fail for at least three reasons. First, to start, Petitioner is incorrect that Abhyanker’s marker-locking feature is an example of Abhyanker’s additional verifications—they are separate and unrelated features, and neither of them satisfy the claimed “second computer input” of claim element 1f. Second, Abhyanker’s additional verifications fail to satisfy the “second computer input”—they are not computer input that is provided to the user and that enables the user to

confirm the user's prior designation of the location of a building roof structure.

Third, Abhyanker's marker-locking feature (1) is not provided in response to Abhyanker's drag-and-drop (as Petitioner alleges) and (2) does not enable the user to confirm the user's prior designation of the location of a building roof structure. EX2031, ¶56.

a. Abhyanker's marker-locking feature is not an example of Abhyanker's additional verifications.

Petitioner is incorrect that Abhyanker's marker-locking feature is an example of Abhyanker's additional verifications. *See* Pet., 35-36; EX1003, ¶¶65-66. They are separate and unrelated features of Abhyanker's disclosure and they occur/are used at different steps (operations) in Abhyanker's disclosed process. EX2031, ¶57; *see also* EX2032, 76:13-81:2.

Abhyanker discusses the additional verifications in paragraphs 11, 53, and 104; in operation 1134 of Figure 11C; and in claim 10, each of which provides a very similar and very superficial description of the additional verifications.

EX1005, ¶¶11, 53, 104, FIG. 11C, claim 10. Abhyanker does not, for example, explain what the additional verifications are or provide any examples of the additional verifications.² EX2031, ¶59; *see also* EX2032, 71:11-76:2. Importantly,

² As discussed below, a skilled artisan would have understood Abhyanker's computer system, not the user, to perform the additional verifications. EX2031,

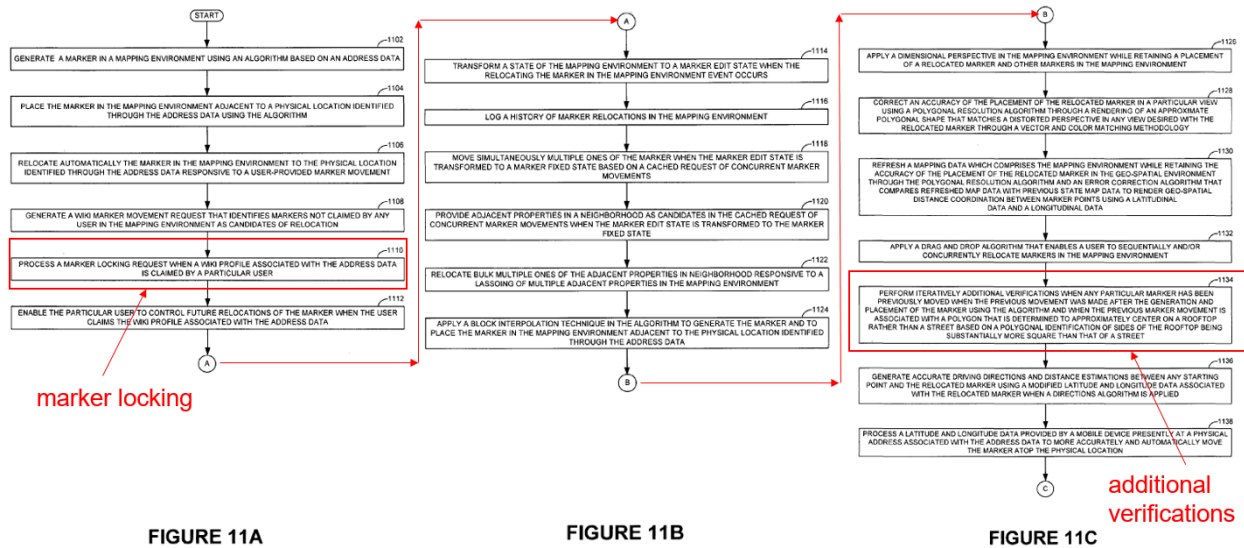
Abhyanker does not teach that the marker-locking feature is an example of an additional verification, or link the two in any way. EX2031, ¶62; *see* EX2032, 80:5-81:2.

Abhyanker discusses marker locking in the abstract, paragraphs 7, 64, 66, 99, Figure 11A, and claim 2. EX1005, abstract, ¶¶7, 64, 66, 99, FIG. 11A, claim 2; EX2031, ¶63. But Abhyanker does not teach that the marker-locking feature is an example of an additional verification. EX2031, ¶64. Nor does Abhyanker mention the additional verifications when discussing marker locking. EX2031, ¶64.

Based on Abhyanker's disclosure, there is simply no basis to conclude that a skilled artisan would have understood Abhyanker's marker-locking feature to be an example of Abhyanker's additional verifications. EX2031, ¶65. Abhyanker discloses that Figures 11A-D illustrate a process flow that begins in Figure 11A and is continued through Figure 11D. EX1005, ¶¶34-37, 98-106; *see* EX2032, 77:6-81:2. Abhyanker's marker-locking feature is used in operation 1110 of Figure 11A. EX1005, ¶99, FIG. 11A; EX2032, 79:21-80:4. Abhyanker's additional verifications are used in operation 1134 of Figure 11C. EX1005, ¶104, FIG. 11C; EX2032, 80:5-12. As shown below, operations 1110 and 1134 are performed at different stages of Abhyanker's process and are separated by 11 other operations. EX2031, ¶65; *see* EX2032, 78:7-80:12. Operation 1134 does not refer to

¶¶59-61.

Abhyanker's marker-locking feature. EX2031, ¶65; EX2032, 80:13-81:2. And operation 1110 does not refer to Abhyanker's additional verifications. EX2031, ¶65.



EX1005, FIGS. 11A-11C (annotated).

At bottom, Petitioner and Mr. Cummings are incorrect that Abhyanker's marker-locking feature is an example of Abhyanker's additional verifications. This incorrect allegation forms the basis of Petitioner's invalidity challenge with respect to claim element 1f, and thus demonstrates that Petitioner's challenge is fatally flawed. Moreover, considering these features individually, neither Abhyanker's additional verifications nor Abhyanker's marker-locking feature satisfies the claimed "second computer input" of claim element 1f. EX2031, ¶66.

b. Abhyanker's additional verifications do not satisfy the claimed "second computer input."

Abhyanker's additional verifications do not satisfy the claimed "second

computer input.” EX2031, ¶¶67-77. First, Abhyanker does not teach that the additional verifications are “computer input” that is provided by the computer to the user and that enables the user to confirm the user’s prior designation of the location of a building roof structure. As Mr. Cummings testified, Abhyanker does not explain what the additional verifications are or provide any examples of the additional verifications. EX2032, 71:11-76:2. Second, Mr. Cummings testified that he interpreted Abhyanker’s additional verifications to be when a user uses the drag-and-drop feature to move a marker to a new location. EX2032, 66:1-4, 68:15-69:12, 70:22-71:14. His interpretation improperly maps Abhyanker’s drag-and-drop feature to two separate and distinct claim elements, and also fails to satisfy the temporal requirement of the claimed “second computer input”—that is, Abhyanker’s marker is already on the computer display during a drag-and-drop, it is not provide in response to the drag-and-drop.

- i. **Abhyanker does not disclose that the additional verifications are “computer input” that is provided by the computer to the user and that enables the user to confirm the user’s prior designation of the location of a building roof structure.**

Abhyanker does not disclose that the additional verifications are “computer input” that is provided by the computer to the user and that enables the user to confirm the user’s prior designation of the location of a building roof structure. EX2031, ¶¶67-70. Abhyanker discusses the additional verifications in paragraphs

11, 53, and 104; in operation 1134 of Figure 11C; and in claim 10. EX1005, ¶¶11, 53, 104, FIG. 11C, claim 10; EX2031, ¶67. Each of these discussions provides a very similar, and very superficial, description of the additional verifications. EX2031, ¶67.

In addressing the claimed “second computer input,” Petitioner and Mr. Cummings rely on and quote a *portion* of Abhyanker’s discussion of the additional verifications in paragraph 53. Pet., 34 (“Abhyanker also discloses that ‘*additional verifications* may be iteratively performed when any particular marker has been previously moved[.]’”); EX1003, ¶64 (same). Abhyanker’s full quote related to the additional verifications from paragraph 53 is reproduced below:

Further, additional verifications may be iteratively performed [1] when any particular marker has been previously moved [2] when the previous movement was made after the generation and/or placement of the marker, using the algorithm *and* [3] when the previous marker movement is associated with the polygon that is determined to approximately center on the rooftop rather than the street (e.g., based on a polygonal identification of sides of the rooftop being substantially more square than that of the street).

EX1005, ¶53 (emphasis and numbering added). As shown by the added numbering, Abhyanker expressly discloses that the additional verifications are iteratively performed when three conditions are satisfied. EX1005, ¶53; EX2031, ¶69; EX2032, 55:14-59:10 (confirming that Abhyanker discloses that the

additional verifications are performed when the three conditions in paragraph 53 are satisfied).³

Abhyanker does not explain what the additional verifications are or provide any examples of the additional verifications. EX2031, ¶70; *see* EX2032, 71:11-76:2. Nowhere does Abhyanker teach or suggest that the additional verifications are embodied as a computer input that is provided to the user or that the additional verifications enable a user to take an affirmative step to confirm the user's prior designation of the location of a building roof structure. EX2031, ¶70. At best, Abhyanker explains when the additional verifications are performed (i.e., upon satisfying the three conditions), but does not provide any explanation of what they are. EX2031, ¶70. As a result, Petitioner and Mr. Cummings incorrectly attempt to equate Abhyanker's additional verifications to the marker-locking feature (which fails for the reasons discussed in Section III.B.1.a above) and to the drag-and-drop operation (which fails for the reasons discussed below).

Moreover, a skilled artisan would have understood that Abhyanker's additional verifications are performed by Abhyanker's computer system, not by the

³ Mr. Cummings testified that when he quoted paragraph 53 of Abhyanker in paragraph 64 of his declaration, he omitted the last two conditions because he did not believe they were required. EX2032, 58:7-10 ("There's nothing that I see in here that says that you have to satisfy all three.").

user (as claim element 1f requires). EX2031, ¶¶59-61, 70. Dr. Bajaj explains that Abhyanker's system "programmatically performs the additional verifications when the three listed conditions [in paragraph 53 of Abhyanker] are satisfied. EX2031, ¶59. For example, he explains that Abhyanker teaches that the third condition, related to polygonal determinations, is performed programmatically using a polygonal resolution algorithm, demonstrating that Abhyanker's system, not the user, performs the additional verifications. EX2031, ¶¶60-61.

ii. Mr. Cumming's interpretation of the additional verifications during cross-examination fails to satisfy the claimed "second computer input."

Mr. Cumming's interpretation of Abhyanker's additional verifications during cross-examination fails to satisfy the claimed "second computer input." EX2031, ¶¶71-77. Specifically, Mr. Cummings testified that by "additional verifications" Abhyanker means the user dragging-and-dropping a marker to a new location on the map. EX2032, 64:4-71:14; *see id.*, 66:1-4, 68:15-69:12, 70:22-71:14. He first testified about the first time a marker is moved in Abhyanker's mapping environment. EX2032, 64:4-69:12. Here, Mr. Cummings explained that Abhyanker's computer generates and initially places a marker at a given location on the map, and that the computer's initial placement of the marker on the map is a first "verification." EX2032, 68:15-17 ("[Q] Now, the first verification is when the marker is initially placed by the computer? A Correct."). He testified that a user's

action to drag-and-drop the marker from its initial placement are Abhyanker's "additional verifications." EX2032, 66:1-4 ("Q So the additional verification is the drag and drop, is what you're saying? ... A Yes. That's what I'm saying."), 68:18-69:12.

Mr. Cummings also testified about subsequent marker movements using Abhyanker's drag-and-drop operation. EX2032, 69:13-71:14. Here, he testified that the user (or other users of Abhyanker's system) can use the drag-and-drop feature to move the marker to another location, and this movement of the marker is what Abhyanker means by "additional verifications." EX2032, 70:22-71:4 ("Q Okay. So in your opinion, in paragraph 53 of Abhyanker, when Abhyanker refers to 'additional verifications,' that's referring to the user moving the marker again? A That's my understanding of it.").

Notwithstanding that Patent Owner disagrees with Mr. Cummings's interpretation of Abhyanker, his interpretation and testimony fails to prove that Abhyanker teaches the claimed "second computer input."⁴ Petitioner and Mr.

⁴ Mr. Cummings's testimony is inconsistent with Abhyanker's express teachings related to the drag-and-drop feature and to the additional verifications. EX1005, ¶53; *see* EX2031, ¶¶74-75. Indeed, Mr. Cummings acknowledged that Abhyanker does not describe the additional verifications as he is interpreting them. EX2032, 71:5-14.

Cummings already map Abhyanker’s drag-and-drop feature to the claimed “designation of the building roof structure location.” Pet., 33-34; EX1003, ¶¶62-63; EX2032, 81:12-82:11. Mr. Cummings’s testimony during cross-examination also maps the same drag-and-drop feature to the claimed “second computer input.” This mapping fails because it improperly maps the same feature (drag-and-drop) to the claimed “designation of the building roof structure location” and to the claimed “second computer input,” which are separate and distinct claim elements. *See Becton, Dickinson and Co. v. Tyco Healthcare Gr’p*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (“Where a claim lists elements separately, the clear implication of the claim language is that those elements are distinct components of the patented invention.”) (cleaned up); EX2031, ¶76.

Mr. Cummings’s mapping also fails because it does not satisfy claim element 1f’s temporal requirement. EX2031, ¶77. Again, claim element 1f recites that the “second computer input” is provided “responsive to the designation of the building roof structure location.” In Mr. Cummings’s mapping of both the claimed “designation” and the claimed “second computer input” to Abhyanker’s drag-and-drop feature, there is no “computer input” that is provided in response to moving the marker via a drag-and-drop, such as a check box that allows the user to take an affirmative step to confirm the location of a roof structure. EX2031, ¶77.

* * *

In sum, Petitioner and Mr. Cummings fail to prove that Abhyanker's additional verifications satisfy the claimed "second computer input." Abhyanker is silent as to what he means by "additional verifications," and, critically, does not describe them as a "computer input" that is provided by the user, as recited in claim element 1f. On the contrary, a skilled artisan would have understood that Abhyanker's additional verifications are performed by the system, not the user. Further, Mr. Cummings's deposition testimony mapping the claimed "second computer input" to Abhyanker's drag-and-drop feature is inconsistent with Abhyanker's disclosure, improperly maps the same teaching to two separate and distinct claim features, and fails to satisfy claim element 1f.

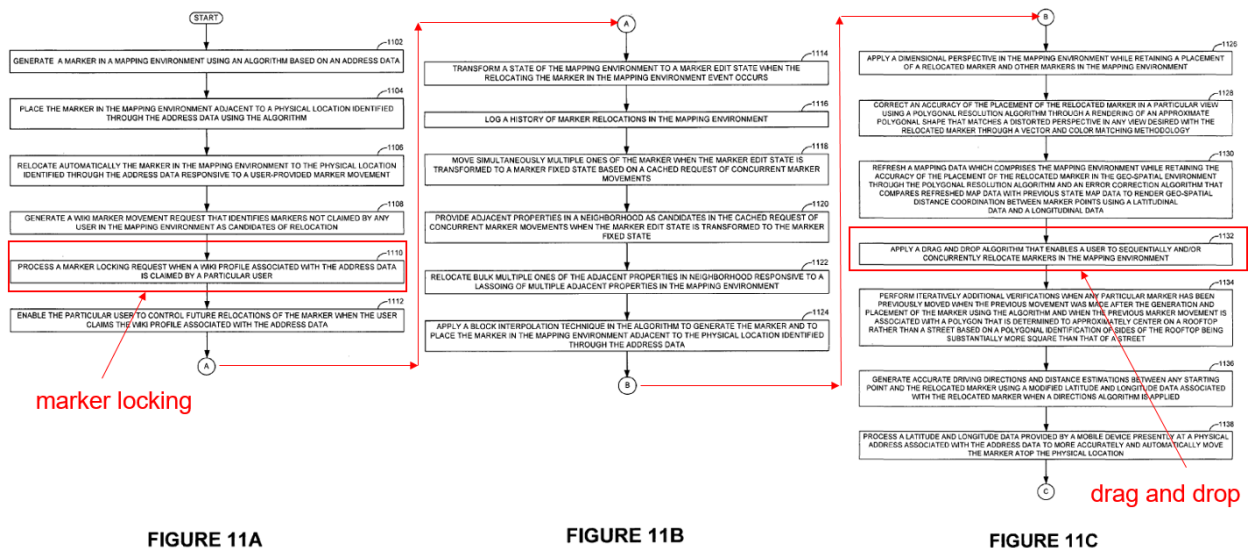
c. Abhyanker's marker-locking feature is not provided in response to Abhyanker's drag-and-drop and does not enable the user to confirm the user's designation of the location of a building roof structure.

Abhyanker's marker-locking feature also fails to satisfy the claimed "second computer input." EX2031, ¶¶78-81. First, Abhyanker does not teach that the marker-locking feature is provided "responsive to receiving the designation of the building roof structure location," which Petitioner maps to Abhyanker's drag-and-drop feature. EX2031, ¶78. Abhyanker shows in Figure 9 the user interface element that enables a user to lock a marker in Abhyanker's system: lock pushpin option 908. EX1005, ¶95, FIG. 9; 2032, 85:17-86:19. Abhyanker is silent regarding when lock pushpin option 908 is provided on the computer interface and

what, if anything, causes lock pushpin option 908 to be provided on the computer interface. EX2031, ¶78.

But, to be sure, whatever causes lock pushpin option 908 to appear on Abhyanker's interface is not using the drag-and-drop feature. EX2031, ¶79.

Abhyanker's marker-locking feature that Petitioner and Mr. Cummings rely on is performed in operation 1110 of Figure 11A of Abhyanker. Pet., 34-35; EX1003, ¶¶64-65; EX2032, 79:21-80:4. Abhyanker's drag-and-drop feature is performed in operation 1132 of Figure 11C. EX1005, ¶104, FIG. 11C. As shown below, Abhyanker's marker-locking request in Figure 11A occurs well *before* (not after and in response to) use of drag-and-drop in Figure 11C; indeed, the two operations are separated by 10 operations. EX2031, ¶79.



EX1005, FIGS. 11A-11C (annotated).

Second, Abhyanker does not teach that the marker-locking feature is

“capable of signaling user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location.” EX2031, ¶80. Instead, Abhyanker teaches that the marker-locking feature is used to claim the “wiki profile” associated with the address at which the marker is located. EX1005, ¶¶64 (“The locking module 220 may process a marker locking request *when the particular user claims the wiki profile associated with the address data.*”) (emphasis added), 66 (“In addition, a marker locking request may be processed *when the wiki profile associated with the address data is claimed by the particular user.*”) (emphasis added), 99 (“The Operation 1110, a marker locking request may be processed *when a wiki profile associated with the address data is claimed by a particular user.*”) (emphasis added). Claiming such a wiki profile, Abhyanker explains, allows the user to control the information that is included in the profile and to prevent other users from relocating the marker to a different location. See EX1005, ¶¶58, 63-64, 66; EX2031, ¶80. But claiming a wiki profile in Abhyanker has nothing to do with confirming the location of a building roof structure. EX2031, ¶80.

So Abhyanker’s marker-locking feature does not satisfy the temporal aspect of the “second computer input” of element 1f—i.e., it is not provided “responsive to receiving the designation of the building roof structure location.” Nor does

Abhyanker’s marker-locking feature satisfy the function required of the “second computer input” of element 1f—i.e., it is not “capable of signaling user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location.” EX2031, ¶81.

2. Petitioner fails to properly resolve the level of ordinary skill in the art.

Petitioner fails to properly resolve the level of ordinary skill in the art. Under § 103, resolving “the level of ordinary skill in the pertinent art” is a necessary factor in evaluating obviousness. *Graham v. John Deere Co. of Kansas City*, 383 US 1, 17 (1966) (“Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved.”). “[T]he level of skill in the art is a prism or lens through which ... the Board views the prior art and the claimed invention.” *Okajima v. Bordeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *see id.* (“This reference point prevents these factfinders from using their own insight or, worse yet, hindsight, to gauge obviousness. . . . Skill in the art does not act as a bridge over gaps in substantive presentation of an obviousness case, but instead supplies an important guarantee of objectivity in the process.”).

Petitioner and Mr. Cummings allege that a skilled artisan “would have [a]

bachelor's degree in architecture or an equivalent with at least five years of experience performing roof estimation," with the caveat that "more experience would compensate for less formal education, and vice versa." Pet., 2; EX1003, ¶7. Mr. Cummings testified that his opinion was based solely on his "experience as an architect and, then, as an estimator," EX2032, 34:19-36:5, which fails to account for critical factors such as the '800 patent itself, the asserted references, and the general state of the art in the technology of the '800 patent. Mr. Cummings further testified that he applied this incorrect definition of a POSITA when forming the opinions he provided in his declaration. EX2032, 5-8.

As Petitioner and Mr. Cummings concede, "[t]he '800 patent is generally directed towards a 'system and process for roof measurement' using an image of a roof." Pet., 2; EX1003, ¶16. The claims are directed to a process for producing roof measurement reports using a computer interface, a non-transitory computer memory storing computer logic, and a method for repairing or construction of a roof. *See, e.g.*, EX1001, Claims 1, 11, 17. The asserted primary references—which may reflect the appropriate level of skill in the art, *Okajima*, 261 F.3d at 1355—are also directed to computer-implemented systems and technologies. *See, e.g.*, EX1004, FIG. 1; EX1005, ¶112; EX1009, FIG. 1; Pet., 11 ("Kennedy teaches a computer implemented method for generating a roof estimate."). Accordingly, as Dr. Bajaj explains, "formal education and/or hands-on experience developing such

computer-implemented technologies are a necessary qualification of a POSITA of the '800 patent.” EX2031, ¶39.

Indeed, the Board preliminary determined that “one skilled in the art would have computer-related experience.” DI, 7. But Mr. Cummings disagreed and maintained that his proffered level of skill in the art is correct. EX2032, 36:6-37:11. He explained that because he does not have a degree in a computer-related field, he could not “imagine what the benefit would be.” EX2032, 36:21-37:11.

Petitioner’s and Mr. Cummings’s failure to properly resolve the level of skill in the art undermines their obviousness analysis, further demonstrating that Petitioner fails to prove that the claims would have been obvious.

C. Dependent claims 9 and 14 would not have been obvious.

Petitioner fails to prove that claims 9 and 14 would have been obvious over the combination of Pershing-789 and Abhyanker. EX2031, ¶¶89-90. Claim 9 depends on claim 2, both of which are reproduced below:

2. The process of claim 1, further comprising providing visual access to one or more *outline drawing* corresponding to the roof structure of the building.

EX1001, 14:30-32 (emphasis added).

9. The process of claim 2, further comprising, providing visual access to a nadir image from an imagery database corresponding to location

coordinates of the building roof structure location, and *wherein the outline drawing is super-imposed on the nadir image.*

EX1001, 14:52-56 (emphasis added).

Claim 14 depends on claim 12, which recite substantially the same elements as claims 2 and 9. EX1001, 15:19-23, 15:28-16:3.

The '800 patent defines “outline drawing”: “The term ‘outline drawing’ means drawing of lines around an outline.” EX1001, 4:15-16. And Mr. Cummings testified that an outline drawing of a roof would include all of the outer edges of the roof structure. EX2032, 44:11-15:3 (“If it’s an outline drawing, it would have to include all of the outer edges.”); *see also* EX2031, ¶88 (agreeing “that an outline drawing would include all of the outer edges of the roof structure.”).

Petitioner alleges that the “scale marker” described in paragraph 32 of Pershing-789 is the outline drawing of claim 9. Pet., 57 (“This ‘scale marker’ depicting ‘physical length’ between pixels constitutes an outline drawing that is superimposed on the nadir image.”); EX1003, ¶98. To address claim 14, Petitioner merely refers back to claim 9. Pet., 61; EX1003, ¶113.

Pershing-789’s scale marker is not an “outline drawing.” EX2031, ¶90. Pershing-789 discloses, “During calibration, the distance in pixels between two points on the image is converted into a physical length. This calibration information is typically presented as a scale marker on the image itself, or as

additional information supplied by the image database provider along with the requested image.” EX1004, ¶32. A skilled artisan would have understood that Pershing-789’s scale marker simply indicates the scale of the physical length shown in the image so that a person viewing the image can understand the proportions of the object shown in the image. EX2031, ¶90; EX2033, 477. Accordingly, Pershing-789 fails to teach the “outline drawing” of claims 9 and 14.

D. Independent claim 17 would not have been obvious.

Abhyanker fails to teach claim element 17d, which recites:

signaling, by the user, user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location.

EX1001, 16:21-24.

Petitioner relies on its analysis of claim element 1f to address claim element 17d. Pet., 62; EX1003, ¶117. Despite the differences in claim language, which Petitioner does not address, Petitioner fails to prove that Abhyanker teaches claim element 17d for at least the same reasons as discussed above for claim element 1f. EX2031, ¶83. As explained in Section III.B.1.a, Petitioner is incorrect that Abhyanker’s marker-locking feature is an example of Abhyanker’s additional verifications. As explained in Section III.B.1.b, Abhyanker does not teach that the additional verifications enable the user to confirm the user’s prior designation of

the location of a building roof structure (or, in the language of 17d, “signal[], by the user, user-acceptance of the building roof structure location within the first image”). And as explained in Section III.B.1.c, Abhyanker’s marker-locking feature allows a user to claim a “wiki profile,” it does not enable the user to confirm the designation of the building roof structure location.

IV. GROUND 2: PETITIONER FAILS TO PROVE THAT CLAIMS 9 AND 14 WERE OBVIOUS OVER PERSHING-789, ABHYANKER, AND PICTOMERTY.

Again, claim 9 recites: “providing visual access to a nadir image from an imagery database corresponding to location coordinates of the building roof structure location, and wherein the *outline drawing* is super-imposed on the nadir image.” The “outline drawing” of claim 9 refers to “the *outline drawing* corresponding to the roof structure of the building” recited in claim 2. Claim 14 recites the same feature.

In Ground 2, Petitioner alleges that Pictometry’s disclosure of various tools for measuring certain attributes, such as distance, square footage, angles, etc., in an image “expressly teaches superimposing drawings on a nadir image.” Pet., 63-64. Petitioner then concludes that “a POSITA would have been motivated to use an ‘outline drawing is superimposed on the nadir image’ in Pershing-789’s system based on the teachings of Bailey.” Pet., 64; EX1003, ¶121.

Petitioner’s arguments fail. First, as Mr. Cummings testified, Mr. Cummings

testified that an outline drawing of a roof would include all of the outer edges of the roof structure. EX2032, 44:11-15:3 (“If it’s an outline drawing, it would have to include all of the outer edges.”). Although Pictometry’s measuring tools allow a user to make certain measurements of objects in an image, Pictometry does not teach or suggests superimposing an outline drawing on a roof structure. EX2031, ¶92. Petitioner’s interpretation extends Pictometry far beyond what it would have taught or fairly suggested to a skilled artisan.

Second, Petitioner’s statement that Bailey would have motivated a POSITA an outline drawing in Pershing-789’s is unsupported and conclusory, and thus insufficient to support an obviousness challenge. *In re Magnum Oil Tools International, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) (“To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.”); *see also TQ DELTA, LLC v. Cisco Systems, Inc.*, 942 F.3d 1352, 1359 (“conclusory expert testimony is inadequate to support an obviousness determination”).

V. GROUND 3: PETITIONER FAILS TO PROVE THAT CLAIMS 1-17 WERE OBVIOUS OVER KENNEDY, ABHYANKER, AND BAILEY.

A. Independent claims 1, 11, and 17 would not have been obvious.

In Ground 3, Petitioner relies on Abhyanker, and Abhyanker alone, to address claim elements 1f, 11f, and 17d. Pet., 74, 86, 88. Petitioner’s arguments

fail in Ground 3 for the same reasons they fail in Ground 1, as explained in Section III.B.1 above. Additionally, Petitioner and Mr. Cummings fail to properly resolve the level of ordinary skill in the art and thus analyze the '800 patent and the asserted references from the wrong perspective, further demonstrating that Ground 3 is fatally flawed. Section III.B.2. *See* EX2031, ¶¶46-85.

B. Claim 2 would not have been obvious.

Kennedy does not disclose the features of claim 2, which recites: “The process of claim 1, further comprising providing visual access to one or more *outline drawing* corresponding to the roof structure of the building.” Petitioner alleges that use of Kennedy’s sizing tool teaches the claimed outline drawing. Pet., 75. Similar to the discussion of claims 9 and 14 above, Kennedy merely discloses that the sizing tool enables the user to make measurements on an object in an image. EX1009, ¶¶58, 109-110. An outline drawing of a roof structure, by contrast, is a drawing that would include all of the outer edges of the roof structure. EX1001, 4:15-16; EX2032, 44:11-15:3 (“If it’s an outline drawing, it would have to include all of the outer edges.”). A skilled artisan thus would not have understood Kennedy’s sizing tool to be (or to enable a user to create) an outline drawing of a roof structure. EX2031, ¶93.

VI. THE BOARD SHOULD NOT CREDIT MR. CUMMINGS’S TESTIMONY.

The Board should not credit Mr. Cummings’s testimony because he is not a

person of ordinary skill in the art of the '800 patent and because opinions are conclusory and unsupported by the references and evidence.

A. Mr. Cummings is not a person of ordinary skill in the art, and thus his opinions should be given no weight.

“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. Int’l Trade Comm’n*, 22 F.4th 1369, 1376-77 (Fed. Cir. 2022). “Without that skill, the witness’ opinions are neither relevant nor reliable.” *Id.*; see also *Avail Medsystems, Inc. v. Teladoc Health, Inc.*, IPR2022-00444, Paper 10 at 22-26, 28-29, 31 (P.T.A.B. July 21, 2022) (in decision denying institution, according no weight to expert’s “testimony from the perspective of a skilled artisan” because the expert lacked the specific experience with teleconferencing systems required under the adopted definition of a skilled artisan); *Incyte Corp. v. Concert Pharms., Inc.*, PGR2021-00006, Paper 68 at 8-9 (P.T.A.B. May 11, 2022) (in final written decision, according no weight to expert’s opinions “with regard to issues of treating hair loss disorder” because the expert lacked the specific experience required under the adopted definition of a POSITA).

In *Kyocera*, the Federal Circuit held that it was an abuse of discretion to admit any expert testimony from the perspective of a skilled artisan when the expert lacks the specific experience required of such a skilled artisan. *Kyocera*, 22

F.4th at 1375-78. In particular, “[t]he level of ordinary skill in the art” of the patent-at-issue in *Kyocera* “require[d] experience in power nailer design.” *Id.* at 1377. Although Kyocera’s expert had “advanced degrees in engineering and extensive experience in the design and manufacture of fastener driving tools,” *id.* at 1376, he lacked the specific experience with power nailer design required under the adopted definition of a POSITA, *id.* at 1377. Accordingly, the court held that it was improper to rely on the expert’s testimony “on any issue that [was] analyzed through the lens of an ordinarily skilled artisan.” *Id.* at 1377-78.

Mr. Cummings does not qualify as a POSITA, which requires a bachelor’s degree in an academic area emphasizing the design of electrical, computer, or software technologies, or a similar discipline, and at least two years of experience related to computerized image analysis and three-dimensional modeling. EX2031, ¶35. Mr. Cummings holds a Bachelor of Architecture but does not have any formal education in a computer-related field. EX2032, 24:9-19. He has no formal education in computerized image analysis or three-dimensional modeling. EX2032, 24:20-26:14. Mr. Cummings testified that he has experience *using* computer-aided design and estimating software, such as SoftPlan (*see* EX2034) and PlanSwift (*see* EX2035), and using programs for searching and reviewing building codes. EX2032, 28:2-34:4.

In his declaration, Mr. Cummings claimed to have “have experience

collaborating with software developers to create new software in my field.”

EX1003, ¶6. But during cross-examination he testified that this experience is limited to a single instance in which he engaged his nephew to develop software capable of uploading images from a construction site to the Internet for this clients to review. EX2032, 17:19-23:4. The software, which they called “Keystone,” merely allows a client to view an image, not to manipulate the image or take any measurements. EX2032, 22:17-23:4. And Mr. Cummings’s role in Keystone was to provide his nephew “the concept of what we needed to do, how it was supposed to work, [and] what we wanted the outcome to be,” and his nephew would then “provide the computer programming aspect of it.” EX2032, 18:1-13.

At bottom, Mr. Cummings is an architect who has experience with software packages that are commonly used in the field of architecture, such as CAD packages and software for reviewing building codes. This general experience does make him a POSITA of the ’800 patent, which describes and claims computer-implemented technologies for analyzing aerial imagery. Because Mr. Cummings is not a POSITA, the Board should not credit his opinions.

B. Mr. Cummings’s opinions are conclusory and repeat *verbatim* the Petition, and thus are entitled to no weight.

Mr. Cummings opinion is a verbatim carbon copy of the Petition and should be given no weight. “[C]onclusory expert testimony is inadequate to support an obviousness determination” *TQ Delta, LLC v. Cisco Systems, Inc.*, 942 F.3d

1352, 1359 (Fed. Cir. 2019); *see also In re Magnum Oil Tools Int’l*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) (“To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements.”). The Board does not credit declaration testimony that “merely repeats, verbatim, the conclusory assertion for which it is offered to support.” *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15-16 (P.T.A.B. August 24, 2022) (precedential) (emphasis omitted); *see also id.* at 15 (“[T]he cited declaration testimony is conclusory and unsupported, adds little to the conclusory assertion for which it is offered to support, and is entitled to little weight.”); 37 C.F.R. § 42.65(a).

The key substantive sections of Mr. Cummings’s declaration are conclusory and repeat Petitioner’s arguments presented in the Petition, and thus are not entitled to any weight. *See* EX2014. For example, Mr. Cummings’s opinions regarding claim elements 1f, 11f, and 17d are conclusory—he does not explain why a skilled artisan would have allegedly understood that Abhyanker’s additional verifications satisfy the claimed “second computer input” or why a skilled artisan would have allegedly understood that Abhyanker’s marker-locking feature is an example of Abhyanker’s additional verifications. *See* EX1003, ¶¶64-66. Additionally, his opinions merely repeat the conclusory arguments in the Petition. *See* EX2014, 49-51, 91, 94-95. When asked during cross-examination whether he wrote his declaration or portions of it, Mr. Cummings testified that is was a

“collaborative effort” but candidly admitted that “there’s nothing in here that I’ve written specifically” 13:10-19.

At bottom, Mr. Cummings’s Declaration is the quintessential cut-and-paste copy of conclusory attorney argument that *TQ Delta*, *Magnum Oil Tools*, and *Xerox* instruct should be given no weight.

VII. CONCLUSION

Petitioner fails to meet its burden of persuasion in this proceeding. The Board should reject the Petition and find all of the challenged claims not unpatentable.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX PLLC

A handwritten signature in black ink that reads "Richard M. Bemben". The signature is fluid and cursive, with the first name "Richard" being the most prominent part.

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CERTIFICATE OF WORD COUNT (37 C.F.R. § 42.24(d))

1. This Patent Owner Response complies with the type-volume limitation of 14,000 words, comprising 7,485 words, excluding the parts exempted by 37 C.F.R. § 42.24(a)(1).
2. This Patent Owner Response complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word 2016 in 14-point Times New Roman font.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX PLLC

A handwritten signature in black ink, reading "Richard M. Bemben". The signature is fluid and cursive, with the first name "Richard" being the most prominent.

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CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e))

I certify that the above-captioned **PATENT OWNER RESPONSE**
UNDER 37 C.F.R. § 42.120 and accompanying Exhibits 2031-2036 were served
in their entireties on November 27, 2023, upon the following parties via electronic
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