

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ROOFR INC.,
Petitioner

v.

PICTOMETRY INTERNATIONAL CORP.,
Patent Owner

IPR2023-00435
Patent 10,648,800

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. THE BOARD SHOULD NOT DISREGARD MR. CUMMINGS’ OPINIONS	2
A. Mr. Cummings Qualifies as a POSITA Under the Standard Adopted in the Institution Decision	2
B. Mr. Cummings’ Opinions Are Not Conclusory	7
III. THE LEVEL OF SKILL IN THE ART ADOPTED IN THE INSTITUTION DECISION DOES NOT UNDERMINE THE PETITION’S OBVIOUSNESS ANALYSIS	10
IV. GROUNDS 1-3: ABHYANKER RENDERS OBVIOUS LIMITATIONS 1F, 11F, AND 17D	12
A. Whether Or Not Abhyanker’s Marker Locking Feature Is an Example of Abhyanker’s Additional Verifications Is Immaterial to Obviousness	13
B. Abhyanker’s Marker Locking Feature Signals “User-Acceptance” of a Location on the Map	15
C. Abhyanker’s Marker Locking Feature Is Provided “Responsive To” the Designation of a Location	18
V. GROUND 1: PERSHING-789 RENDERS OBVIOUS DEPENDENT CLAIMS 9 AND 14	27
VI. GROUND 2: PICTOMETRY RENDERS OBVIOUS DEPENDENT CLAIMS 9 AND 14	28
VII. GROUNDS 3: KENNEDY RENDERS OBVIOUS DEPENDENT CLAIM 2	29

TABLE OF AUTHORITIES

<i>Avail Medsystems, Inc. v. Teladoc Health, Inc.</i> , IPR2022-00444, Paper 10 (P.T.A.B., July 21, 2022)	7
<i>Varian Med. Sys., Inc. v. Best Med. Int’l, Inc.</i> , IPR2020-00072, Paper 71 (P.T.A.B. Apr. 23, 2021)	7
<i>Vitronics Corp. v. Conceptiontronic, Inc.</i> , 90 F.3d 1576 (Fed. Cir. 1996)	22
<i>Xerox Corp. v. Bytemark, Inc.</i> , IPR2022-00624, Paper 9 (P.T.A.B. Aug. 24, 2022).....	8

LIST OF EXHIBITS

Exhibit	Description
Ex. 1001	U.S. Patent No. 10,648,800 (“’800 patent”)
Ex. 1002	File History of the ’800 patent
Ex. 1003	Expert Declaration of Tony Cummings
Ex. 1004	U.S. Pat. Pub. No. 2008/0262789 A1 (“Pershing-789”)
Ex. 1005	U.S. Pat. Pub. No. 2007/0220174 A1 (“Abhyanker”)
Ex. 1006	U.S. Pat. Pub. No. 2008/0231700 A1 (“Schultz”)
Ex. 1007	<i>Airborne Digital Imaging Technology: A New Overview</i> , Petrie et al., <i>The Photogrammetric Record</i> 11(119): 203-225 (September 2007) (“Petrie”)
Ex. 1008	<i>Pictometry: aerial photography on steroids</i> , LET Staff, <i>Law Enforcement Technology</i> (July 2002) (“Pictometry”)
Ex. 1009	U.S. Pat. Pub. No. 2009/0304227 A1 (“Kennedy”)
Ex. 1010	<i>Roofer: Steep Roofing Inventory Procedures And Inspection And Distress Manual For Asphalt Shingle Roofs</i> , David M. Bailey, U.S. Army Corps of Engineers, CERL Tech. Rept. (December 1999) (“Bailey”)
Ex. 1011	04/17/2008 Drawings From File History of Pershing-789
Ex. 1012	Declaration of Sylvia Hall-Ellis
Ex. 1013	Declaration of Ron Hagiz in Support of Petitioner’s Motion for <i>Pro Hac Vice</i> Application
Ex. 1014	Deposition Transcript of Chandrajit Bajaj

GROUND OF CHALLENGE (37 C.F.R. § 42.204(b)(2))

No.	Ground for Challenge
1	Pershing-789 And Abhyanker Render Obvious Claims 1-17 Of The '800 Patent
2	Pershing-789, Abhyanker And Pictometry Render Obvious Claims 9 And 14 Of The '800 Patent
3	Kennedy And Abhyanker Render Obvious Claims 1-17 Of The '800 Patent

LIST OF CHALLENGED CLAIMS

Claim
Claim 1a: A process, comprising:
Claim 1b: receiving first location data;
Claim 1c: providing visual access to a first image corresponding to the first location data, the first image including a roof structure of a building;
Claim 1d: providing a first computer input capable of signaling a designation from a user of a building roof structure location within the first image, wherein the building roof structure location is a geographic position of the building roof structure and is different than the first location data;
Claim 1e: receive a designation of the building roof structure within the first image;
Claim 1f: 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; and
Claim 1g: subsequent to receiving the user-acceptance confirming the designation of the building roof structure location, providing a report for the building roof structure.
Claim 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.
Claim 3: The process of claim 2, further comprising providing one or more length dimension on the outline drawing.
Claim 4: The process of claim 3, wherein the length dimension is one or more of a perimeter of the roof structure, a length of a ridge of the roof structure, a total length of ridges of the roof structure, a length of a valley of the roof structure, a total length of valleys of the roof structure, a length of a flashing of the roof structure, and a total length of flashings of the roof structure.
Claim 5: The process of claim 2, further comprising providing one or more area dimension on the outline drawing.

Claim
Claim 6: The process of claim 2, further comprising providing one or more pitch dimension on the outline drawing.
Claim 7: The process of claim 2, further comprising providing one or more indicator of pitch direction on the outline drawing.
Claim 8: The process of claim 2, further comprising providing one or more non-dimensional attribute of the roof structure on the outline drawing.
Claim 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.
Claim 10: The process of claim 1, wherein the first image is taken from an overhead view with respect to the roof structure of the building.
Claim 11a: A non-transitory computer memory storing computer logic, that when executed by computer hardware causes the computer hardware to:
Claim 11b: receive first location data generally corresponding to a geographic location of a building;
Claim 11c: provide visual access to a first image corresponding to the first location data, the first image including a roof structure of the building;
Claim 11d: provide a first computer input capable of signaling a designation from a user of a building roof structure location within the first image, wherein the building roof structure location is a geographic position of the building roof structure and is different than the first location data;
Claim 11e: receive the designation of the building roof structure location;
Claim 11f: responsive to receiving the designation of the building roof structure location, provide 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; and

Claim
Claim 11g: subsequent to receiving the user-acceptance confirming the designation of the building roof structure location, providing a report for the building roof structure.
Claim 12: The non-transitory computer memory of claim 11, wherein said computer logic when executed by computer hardware causes the computer hardware to: provide visual access to one or more outline drawing corresponding to the roof structure of the building.
Claim 13: The non-transitory computer memory of claim 12, wherein said computer logic when executed by computer hardware causes the computer hardware to: provide at least one length dimension on the outline drawing.
Claim 14: The non-transitory computer memory of claim 12, wherein said computer logic when executed by computer hardware causes the computer hardware to: provide visual access to a nadir image of 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.
Claim 15: The non-transitory computer memory of claim 12, wherein said computer logic when executed by computer hardware causes the computer hardware to: provide one or more area dimension on the outline drawing.
Claim 16: The non-transitory computer memory of claim 11, wherein the first image is taken from an overhead view with respect to the roof of the building.
Claim 17a: A method, comprising:
Claim 17b: receiving, by a user, visual access to a first image of a region corresponding to first location data, the first image including a roof structure of a building;
Claim 17c: signaling, by the user, a designation from the user of a building roof structure location within the first image, wherein the building roof structure location is a geo-graphic position of the building roof structure and is different than the first location data;
Claim 17d: 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; and

Claim
Claim 17e: subsequent to signaling the user-acceptance confirming the designation of the building roof structure location, receiving a report for the building roof structure; and
Claim 17f: repairing or constructing a roof designated by the building roof structure location.

I. INTRODUCTION

The Response filed by Patent Owner Pictometry International Corp. (“PO”) fails to raise any persuasive reason to preserve the validity of claims 1-17 (“the challenged claims”) of the ’800 patent.

For the majority of the challenged claims, PO only disputes a single limitation: a “second computer input capable of signaling user-acceptance of [a] building roof structure location.” Most of PO’s arguments are directed to Abhyanker’s “additional verifications”—which Petitioner does not even contend discloses the limitation. PO’s arguments responsive to Petitioner’s actual theory—Abhyanker’s locking module, which locks the position of a marker designating a location—are contradicted by the express disclosures of Abhyanker, as well as the ’800 Patent itself.

PO also disputes several dependent claims relating to the display of outline drawings. However, PO largely does not address the teachings the Petition relies on, which disclose specific tools that enable users to place or draw outlines around a roof structure. PO simply argues that these tools do not satisfy the claims because they are used for measurement, but nothing in the claims preclude measurement tools from satisfying the limitations.

Lacking meaningful substantive arguments, PO instead argues that the Board should disregard the opinions of Petitioner's expert, Mr. Cummings, contending that he is not qualified as a POSITA and that his opinions are conclusory. But in challenging Mr. Cummings' qualifications, PO does not apply the level of skill in the art that the Board adopted in its Institution Decision (and that PO itself proposed in its POPR). PO also fails to cite any authority that supports its argument that Mr. Cummings' declaration is "conclusory" or should be disregarded simply because it is similar to the Petition. In any event, the Board already rejected both arguments in its Institution Decision, and PO does not offer any additional facts or argument to warrant a different conclusion.

II. THE BOARD SHOULD NOT DISREGARD MR. CUMMINGS' OPINIONS

A. Mr. Cummings Qualifies as a POSITA Under the Standard Adopted in the Institution Decision

PO argues that the Board should give no weight to the testimony of Petitioner's expert, Mr. Cummings, because he does not qualify as a POSITA. POR 35-37. However, PO does not apply the level of skill in the art adopted by the Board in its Institution Decision to arrive at this conclusion.

In its Institution Decision, the Board adopted Patent Owner’s definition of the level of skill in the art—*i.e.*, one with 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”—but with the caveat that “experience may compensate for formal education, and vice versa.” Institution Decision 7. Applying this definition, the Board found that Mr. Cummings qualifies as a POSITA, despite his “lack [of] formal computer-related education,” because he “‘ha[s] extensive experience using software related to construction’ including ‘decades working with software related to construction modeling and estimation.’” *Id.* (quoting Ex. 1003, ¶6) (alteration in original). The Board also credited Mr. Cummings’ experience “collaborating with software developers to create new software in my field.” *Id.*

PO nevertheless argues that Mr. Cummings does not qualify as a POSITA because he “has no formal education in computerized image analysis or three-dimensional modeling.” But the level of skill in the art proposed by PO and adopted by the Board does not require *formal* education in computerized image analysis or three-dimensional modeling—it merely

requires experience *related to* those fields. Indeed, the level of skill in the art as adopted by the Board’s Institution Decision does not require *formal* education at all—as noted above, it expressly recognizes that experience may compensate for formal education. PO does not dispute that Mr. Cummings has extensive experience using “computer-aided design and estimating software,” including “software packages that are commonly used in the field of architecture, such as CAD packages.” PO 36-37 (acknowledging Mr. Cummings’ experience with such software). Yet such software packages are precisely the type of “computerized image analysis and three-dimensional modeling” that the level of skill in the art adopted by the Board contemplates. Indeed, even PO’s expert would not state that Mr. Cummings’ experience does not qualify him as a POSITA. Ex. 1014, 13:8-14:8.

PO also attempts to downplay Mr. Cummings’ experience with software development by describing it as a project with his “nephew,” but Mr. Cummings testified that his nephew is a professional computer programmer with roughly 30 years of experience in software programming. Ex. 2032, 20:5-21:1. Further, Mr. Cummings developed the software in response to a request from a client, and used the developed software product in his

professional capacity, including by making it available to clients for use. *Id.*, Ex. 2032, 18:2-19:21.

To the extent PO is arguing that Mr. Cummings must have experience *developing or programming* computerized image analysis and three-dimensional modeling—although PO does not expressly raise this argument—PO offers no support for such a narrow level of skill in the art here. Indeed, even PO’s proposed level of skill in the art only required experience *relating to* such computerized technologies, not experience programming or developing them.

Nor would one require experience with programming to understand the alleged invention of the ’800 patent or the relevant prior art. The majority of the ’800 patent is not directed to computer software or computer programming. Instead, it discusses roofing terminology, line drawings of roofs, mathematical algorithms relating to roof measurements, and roof reports. *See, e.g.*, Ex. 1001, 2:57-5:24 (defining terms primarily relating to roofing, location, and drawings), 5:55-6:31 (describing a line drawing of a roof), 6:57-7:25 (mathematical algorithm for determining pitch direction), 7:61-8:32 (mathematical algorithms for area and pitch), 9:13-44. Further, the limited reference to computerized technology merely relies upon standard computer

input devices, applications, and graphical user interface elements. *See, e.g., id.* 7:40-46 (roof report can be provided as a .pdf document), 10:11-13 (images may be Google Earth imagery), 10:19-23 (computer mouse or arrow keys used to designate locations in image), 10:25-28 (user input may be a standard button or checkbox). The claims similarly are directed to graphical user interface elements that a user of the software system views and interacts with, such as text and image display, text input, and user selection. In short, all of these elements would be familiar to and understood by one with experience ***using*** image analysis and computer modeling software, regardless of experience with programming or software development. Indeed, Mr. Cummings testified that there was no disclosure in the '800 patent or the prior art that he could not understand. Ex. 2032, 89:16-90:4. Even PO's expert agrees that computer programming, such as "source code," is not necessary to understand the '800 patent. Ex. 1014, 16:22-18:12.

In addition, even if the Board were to determine that Mr. Cummings is not a POSITA under its adopted definition, it may nevertheless "consider his opinions on the issues for which he is qualified to offer testimony, compare his opinions to the disclosures of the prior art references and the challenged patent, and the entirety of the evidence of record to weigh each part of his

relative opinion testimony separately.” *Avail Medsystems, Inc. v. Teladoc Health, Inc.*, IPR2022-00444, Paper 10, 26 (P.T.A.B., July 21, 2022); *see also* *Varian Med. Sys., Inc. v. Best Med. Int’l, Inc.*, IPR2020-00072, Paper 71, 21 (P.T.A.B. Apr. 23, 2021) (finding expert’s experience “adequately related” to claimed inventions even where expert lacked “computer programming” experience required by the adopted level of skill in the art).

For example. Mr. Cummings’ opinions on motivation to combine—which Petitioner does not even dispute—are directed to benefits the proposed combinations would offer to *users* of the roofing software at issue—an opinion he is clearly qualified to offer based on his experience as an architect and estimator, including using and designing software systems relating to computer modeling. *See* Ex. 1003, ¶¶44-46, 122-126, 128-134. Importantly, PO does not raise any arguments that rest on an opinion from the perspective of a POSITA—such as disputes over claim construction or motivation to combine. PO’s arguments are based on the express disclosures of the ’800 Patent and the prior art, which the Board is fully capable of evaluating.

B. Mr. Cummings’ Opinions Are Not Conclusory

PO also argues that Mr. Cummings’ opinions should be given no weight because his opinions are replicated in the Petition. POR 37-39. However, the

authority PO cites on this point merely holds that *conclusory* assertions cannot support an obviousness determination. For example, in *Xerox Corp. v. Bytemark, Inc.*, the Board gave “little weight” to an expert declaration asserting a missing limitation would be obvious where the expert merely asserted the obviousness of the limitation, but did not “cite to additional supporting evidence or provide any technical reasoning to support his statement.” *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9, 15-16 (P.T.A.B. Aug. 24, 2022). The Board did not disregard the expert’s opinion merely because it was repeated in the petition, as PO suggests. Indeed, no authority cited by PO sets forth such a rule, and the Board’s Institution Decision in this proceeding already noted that the mere fact that “the Petition repeats Mr. Cummings’s testimony” is not “problematic” and “does not undermine the testimony’s persuasiveness ..., nor does it mean Petitioner’s arguments are conclusory.” Institution Decision 8.

Nowhere in his declaration does Mr. Cummings provide the type of conclusory assertion that the Board rejected in *Xerox*—*i.e.*, by simply asserting that a limitation is disclosed or obvious, without supporting evidence or reasoning. For example, Mr. Cummings’ opinion regarding Abhyanker’s disclosure of clam elements 1f, 11f, and 17d—the only specific opinions that

PO addresses—is supported by citations to Abhyanker and explanation of Abhyanker’s relevant disclosures, technical reasoning as to how a POSITA would understand those disclosures, and detailed explanation regarding how and why a POSITA would apply Abhyanker’s teachings to Pershing-789 and Kennedy. *See, e.g.*, Ex. 1003, ¶¶44-46, 62-66. PO and PO’s expert do not even challenge the overwhelming majority of Mr. Cummings’ opinions, including his opinions on motivation to combine.

Indeed, PO’s argument based on the similarity of the Petition and Mr. Cummings’ declaration is surprising, because PO’s own expert offers opinions on critical issues that mirror the POR. For example, PO’s argument that Abhyanker’s marker-locking feature is not “capable of signaling user-acceptance of the building roof structure location”—one of the only disputes raised as to the independent claims—is word-for-word virtually identical to the corresponding opinion in the declaration of PO’s expert. *Compare* POR 25-26 (paragraph beginning “Second, ...”) *with* Ex. 2031, ¶80.

PO also suggests that Mr. Cummings did not write his declaration because he testified that it was a “collaborative effort” with counsel. POR 38-39. Importantly, PO ignores Mr. Cummings’ testimony explaining that the declaration was the result of conversations with counsel, who recorded his

opinions and input, and confirming that all of the opinions in his declaration were his own. Ex. 2032, 13:14-22. Whether or not Mr. Cummings personally typed up his declaration has no bearing on the substance of his opinions.

III. THE LEVEL OF SKILL IN THE ART ADOPTED IN THE INSTITUTION DECISION DOES NOT UNDERMINE THE PETITION'S OBVIOUSNESS ANALYSIS

PO separately argues that the Petition and Mr. Cummings cannot establish obviousness because they applied a level of skill in the art different from that adopted by the Board in its Institution Decision. POR 27-29. PO is incorrect.

As an initial matter, Mr. Cummings expressly confirmed at his deposition that all of the opinions in his declaration remain the same even under the level of skill in the art adopted by Board in its Institution Decision.¹ Ex. 2032, 89:6-15. PO did not question Mr. Cummings further on this issue at his deposition. Mr. Cummings' testimony thus confirms that the Petition

¹ Mr. Cummings also did not testify that his opinions on obviousness were based "solely" on his experience as an architect and an estimator, as PO contends. POR 28. The cited testimony merely asked Mr. Cummings for the basis behind his proposed level of skill in the art. Ex. 2032, 35:9-20. However, Mr. Cummings also identified his experience with software related to construction modeling and estimation and his experience with software development as experience relevant to his opinions more generally. Ex. 1003, ¶6; Ex. 2032, 15:1-12.

and Mr. Cummings’ obviousness analyses apply even under the level of skill in the art adopted by the Board in its Institution Decision.

In addition, the Board already found at institution that the Petition, as supported by Mr. Cummings’ testimony, demonstrated a “reasonable likelihood of succeeding” notwithstanding the fact that the Board adopted a level of skill in the art different from that proposed in the Petition. Institution Decision 13. Accordingly, the Board effectively recognized that the alternate level of skill in the art it adopted did not undermine Mr. Cummings’ opinions and was not otherwise fatal to the Grounds presented in the Petition.

Finally, PO does not explain how or why a different level of skill alone would result in a different conclusion for any analysis, argument, or opinion presented in the Petition or in Mr. Cummings’ declaration. PO’s arguments relating to obviousness merely assert that several limitations are not disclosed in the prior art relied upon in the Petition—without regard to the level of skill in the art is applied. PO does not even dispute the majority of the analysis presented and relied upon in the Petition, including Mr. Cummings’ opinions on motivation to combine and reasonable expectation of success, or his interpretation and understanding of the claim limitations. Nor does the Petition rely on specialized technical knowledge or experience that would not

be available to a POSITA under the definition adopted by the Board in its Institution Decision. For example, no Ground in the Petition depends on a claim construction applying a specialized definition known to a POSITA. Similarly, Mr. Cummings' opinions on motivation to combine and reasonable expectation of success do not depend on specialized technical knowledge depending on the level of skill in the art—to the contrary, he explained that the motivation to combine was based on express teachings in the prior art, as well as convenience, accuracy, and flexibility for users of the computer systems and methods at issue. *See, e.g.*, Ex. 1003, ¶¶43-46, 122-126, 128-134.

IV. GROUNDS 1-3: ABHYANKER RENDERS OBVIOUS LIMITATIONS 1F, 11F, AND 17D

Grounds 1-3 of the Petition are obviousness grounds that rely on Abhyanker (Ex. 1005) in combination with either Pershing-789 (Ex. 1004, Grounds 1-2) or Kennedy (Ex. 1009, Ground 3). All three grounds rely on Abhyanker to render obvious limitations in the challenged independent claims that recite elements in a graphical user interface for manually selecting a roof structure within an image (*e.g.*, a map) and confirming the selection. PO only disputes that Abhyanker discloses the confirmation step, as recited in limitations 1f, 11f, and 17d.

A. Whether Or Not Abhyanker’s Marker Locking Feature Is an Example of Abhyanker’s Additional Verifications Is Immaterial to Obviousness

The Petition primarily relies on Abhyanker’s “marker locking” feature for the disclosure of limitations 1f, 11f, and 17d. *See* Pet. 33-34 (1f), 60 (11f, referring back to 1f), 62 (17d, referring back to 1f). More specifically, the Petition explains that Abhyanker teaches that a user may “drag and drop” a marker to designate a roof in an image, as required by limitations 1d-e, 11d-e, and 17c.² *Id.*; *see also id.*, 30-33 (discussing limitations 1d-1e). The Petition then explains that Abhyanker teaches “a user may ‘lock’ the location of a marker,” citing to Abhyanker’s disclosure of a “marker locking request” that “enable[s] the user(s) to control future relocation of the marker in the mapping environment.” Pet. 34; Ex. 1005, [0064]. The Petition repeatedly states that it is the “locking request” that corresponds to the claimed “second computer input capable of signaling user-acceptance of the building roof structure location,” and that the “locking request” is the claimed “affirmative step” that “confirms designation of the building roof structure location.” Pet. 34-35.

² PO does not dispute that Abhyanker’s drag-and-drop operation satisfies these limitations.

Although the Petition relies on Abhyanker's marker locking request as disclosing limitations 1f, 11f, and 17f, the Petition notes in passing that the marker locking request is an example of Abhyanker's "additional verifications" that may be performed "when any particular marker has been previously moved." Pet. 34. PO spills much ink arguing that Abhyanker's marker locking request and additional verifications are separate features, and that Abhyanker's additional verifications do not independently disclose limitations 1f, 11f, and 17f. *See* POR 15-24. These arguments are ultimately immaterial, however. Whether or not Abhyanker's marker locking request is a type of additional verification, the fact remains that Abhyanker's marker locking request renders obvious limitations 1f, 11f, and 17f.

The critical functionality within Abhyanker is the ability to lock the marker that designates a location, thus signaling the user acceptance of that location. Abhyanker's marker locking feature expressly performs that functionality. *See, e.g.*, Ex. 1005, [0064] ("[T]he locking module 220 may enable the user(s) to control the future relocation of the marker in the mapping environment."), [0071] (describing the "locking module" in more detail and explaining that "at least some pushpins in the map may be secured from movement by the user"), [0089] (explaining that a polygon on the map may

be “lock[ed] ... upon confirmation by the user in the neighborhood”), [0095] (describing a “lock pushpin option” in Figure 9 that “enable[s] the user to secure the pushpins from future relocation”).

B. Abhyanker’s Marker Locking Feature Signals “User-Acceptance” of a Location on the Map

PO incorrectly argues that Abhyanker’s marker-locking feature does not signal “user-acceptance of the building roof structure location within the first image,” as required by claims 1f, 11f, and 17d, and that it is instead “used to claim the ‘wiki profile’ associated with the address at which the marker is located.”³ POR 26. But PO’s attempt to limit the functionality of Abhyanker’s marker locking request to claiming a “wiki profile” is expressly contradicted by the disclosure of Abhyanker.

First, Abhyanker expressly teaches that claiming a “wiki profile” generates a marker locking *request*, which is in turn *processed* by a locking module. *See, e.g.*, Ex. 1005, [0064] (“The locking module 220 may *process* a marker locking *request* when the particular user claims the wiki profile associated with the address data), [0066] (“[A] marker locking *request* may

³ The ’800 patent defines “user-acceptance” to mean “an affirmative step or series of steps or computer input, undertaken by user to make a selection.” Ex. 1001, 5:13-15.

be **processed** when the wiki profile associated with the address data is claimed by a particular user.”). Thus, as expressly described, the locking module and the marker locking feature are not used to claim a “wiki profile”; rather, they provide functionality that may be triggered **when** a “wiki profile” is claimed. Abhyanker separately explains that the function performed by the locking module and the marker locking feature is to “enable the user(s) to control the future relocation of the marker in the mapping environment,” thereby accepting the designated location of the marker. *Id.*, [0064]; *see also id.*, [0096] (describing the “lock pushpin option 908” in the Figure 9, which “enable[s] the user to lock pushpins from movement in the map”); Ex. 2031, ¶48 (PO’s expert agreeing that “lock pushpin 908 in Figure 9” implements a “marker-locking feature”). Tellingly, Abhyanker refers to the relevant module as a “locking” module and not a “profile claiming” module—because its function is to lock the position of a marker, not to claim a wiki profile.

Second, the disclosures that PO relies on expressly state that a marker locking request **may be** processed when a wiki profile associated with an address is claimed. POR 26; Ex. 1005, [0064], [0066], [0099]. Thus, claiming a “wiki profile” is **one condition** that may activate the marker locking feature. However, Abhyanker does not teach that claiming a “wiki profile” is the **only**

condition that triggers a marker locking request. Indeed, other embodiments describe the marker locking feature without any reference to claiming a “wiki profile.” *See, e.g.*, Ex. 1005, [0095]-[0096] (describing the embodiment of Figure 9, which includes a “lock pushpin option 908 [that] may enable the user to secure the pushpins from future relocations,” and does not link the option to claiming a “wiki profile”). Indeed, in Figure 9, the “lock pushpin option 908” is displayed as a button that a user may activate, separate from claiming a “wiki profile.”

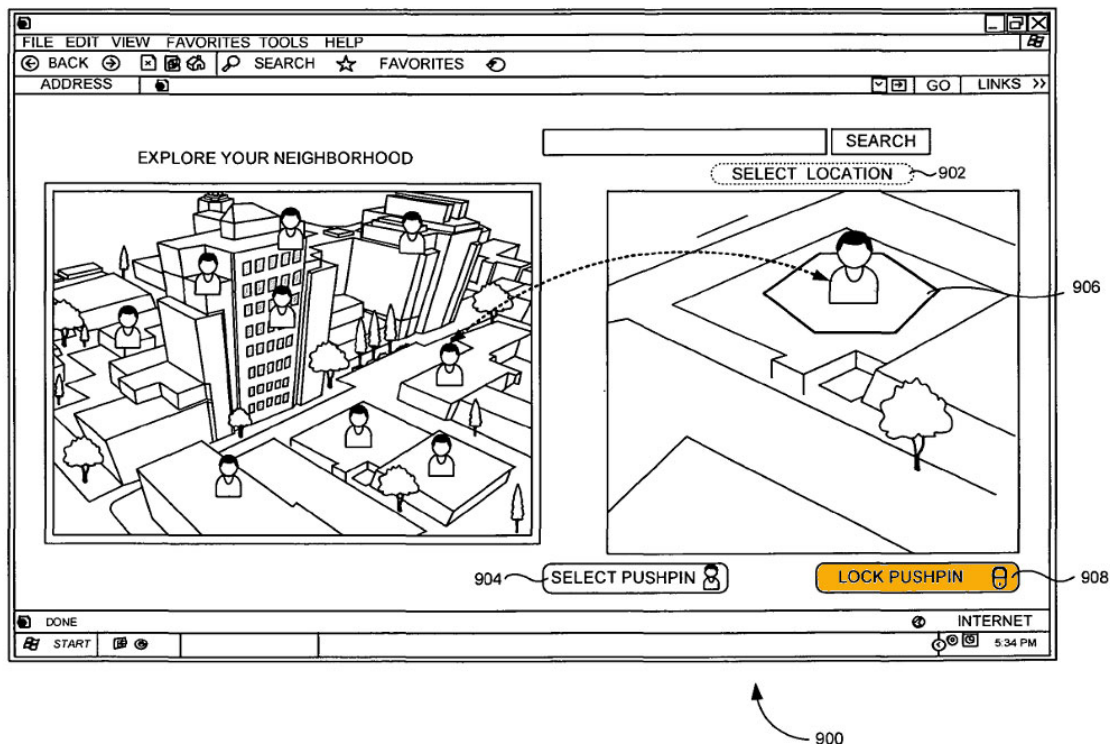


FIGURE 9

Id., Fig. 9 (annotated). Thus, as demonstrated in the embodiment shown in Figure 9, the marker locking feature may be provided as a button that a user affirmatively activates in order to lock (*i.e.*, select and confirm) a location.

**C. Abhyanker’s Marker Locking Feature Is Provided
“Responsive To” the Designation of a Location**

POR also argues that the claims impose a “temporal requirement,” such that the input that is capable of signaling user-acceptance is only provided after the user has initially designated a roof structure (for example, recited in limitations 1d and 1e).⁴ *See* POR 12. POR incorrectly argues this “temporal requirement” is not met by Abhyanker’s marker locking feature because “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.” POR 25.

But POR’s argument contradicts the teachings of the ’800 patent. Figure 4 of the ’800 patent illustrates the claimed computer interface and method, and confirms that a confirmation button to signal user acceptance

⁴ As PO acknowledges, this argument only applies to limitations 1f and 11f. *See* POR 11-29 (addressing claims 1 and 11 only), 31-32 (addressing claim 17, and not raising the “temporal” argument). Limitation 17d is substantively the same as limitations 1f and 11f, except it does not include the “responsive to” requirement.

need not be displayed only *after* the user designates a location. In particular, the '800 patent explains that a user may enter an address to locate in the prompt shown in Figure 4A; Figure 4B then shows the interface displayed immediately after the user has entered an address, and before the user has had an opportunity to move the marker 106a.

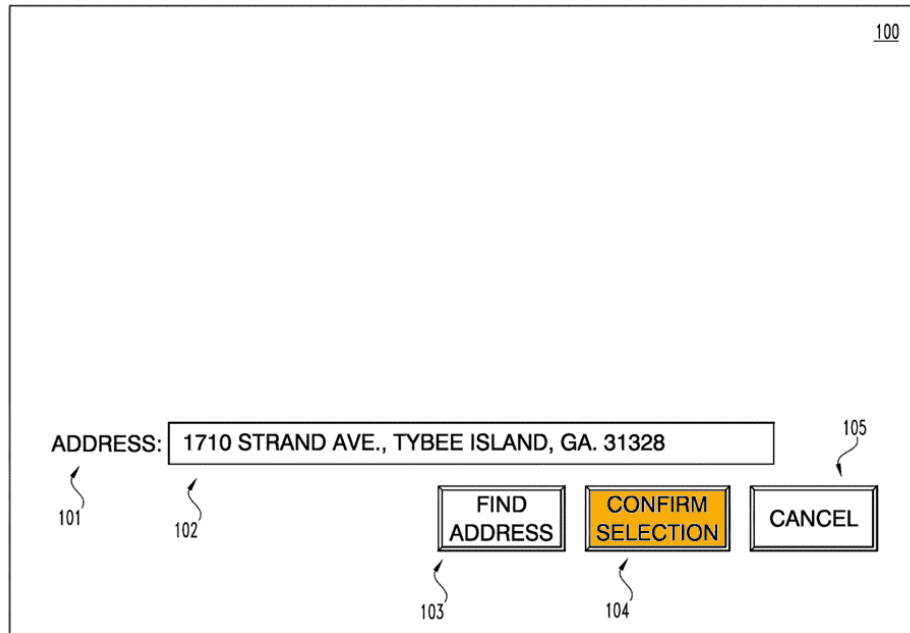


Fig. 4A

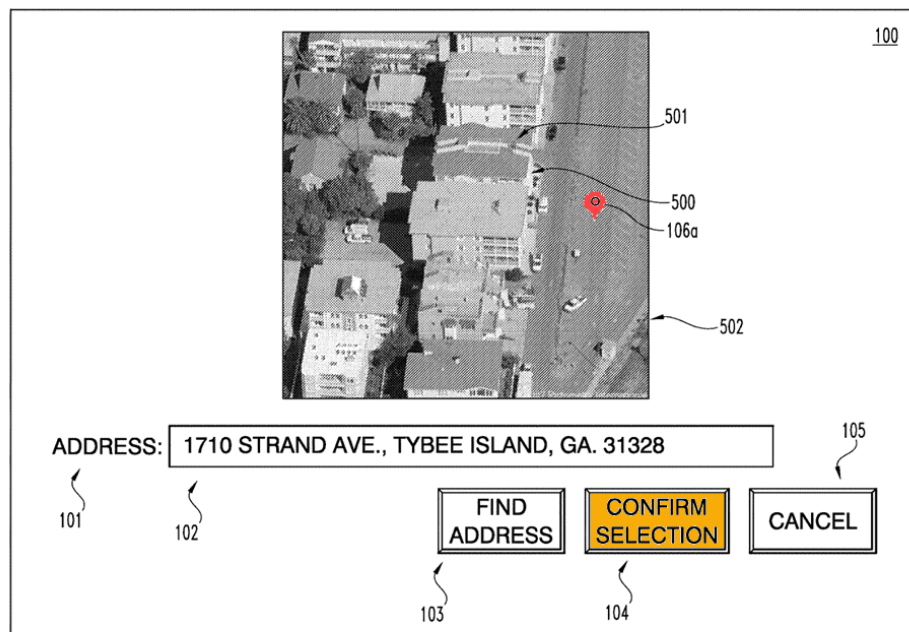


Fig. 4B

Ex. 1001, Figs. 4A, 4B (annotated); *see also id.*, 9:65-10:6. After the interface in Figure 4B is presented, the user “may be allowed to move the marker [106a]

... to a final location 106b.” *Id.*, 10:19-22. As shown in Figure 4C, “[W]hen said marker has been moved to final location 106b, the user may activate a selection confirmation, such as confirm selection button 104.” *Id.*, 10:25-28.

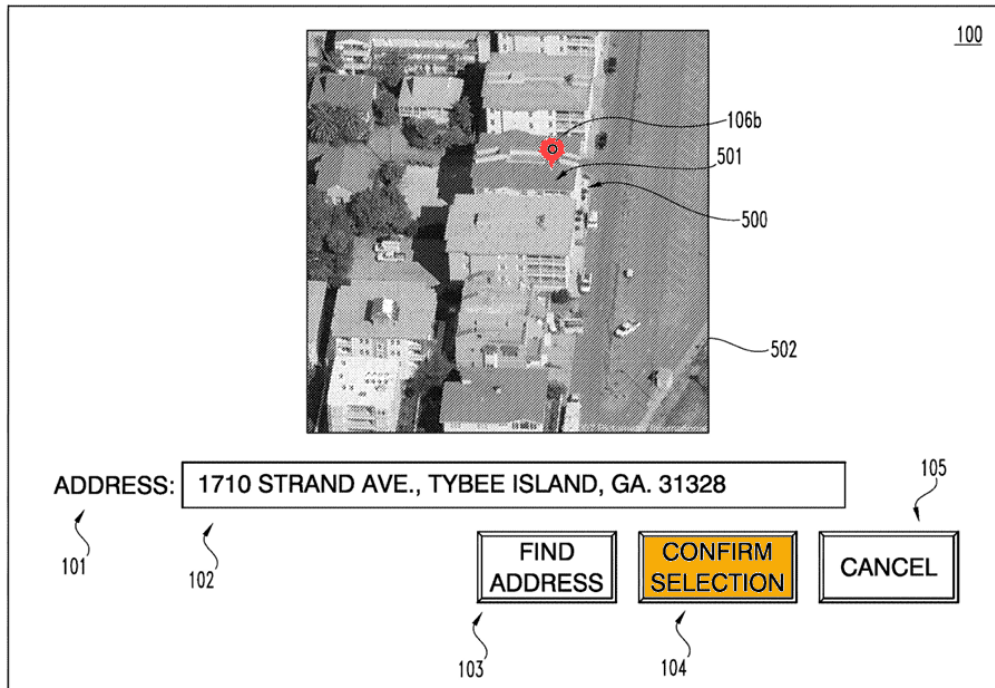


Fig. 4C

Id., Fig. 4C (annotated). The specification expressly states that the “confirm selection” button 104 is used to signal “user acceptance.” *Id.*, 10:30-33.

Importantly, however, the ’800 patent’s “confirm selection” button is shown *at the very beginning of the process*, in Figure 4A—*i.e.*, before the user has moved the marker; indeed, before the marker has even been displayed. PO’s interpretation of “responsive to” as prohibiting the “user acceptance” computer input from being displayed before a marker has been

moved would thus exclude the only embodiment of that computer input disclosed in the '800 patent, and cannot be correct. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996) (claim interpretation that excludes “a preferred (and indeed only) embodiment in the specification ... is rarely, if ever, correct and would require highly persuasive evidentiary support”).

Apparently recognizing the contradiction in its position, PO attempts to characterize the checkbox shown in the report screen of Figure 4D as the input for signaling user acceptance. *See* POR 6-7. However, the '800 patent only describes the confirm selection button in Figures 4A-4C as signaling user acceptance—not the checkbox in Figure 4D. *See* Ex. 1001, 10:36-38. In addition, the specification makes clear that Figure 4D is only displayed *after* the “confirmed selectio button 104 or other such user acceptance is activated,” and that Figure 4D shows “the final location 106b of the marker” that has already been “confirmed by the end user.” *Id.*, 10:30-33, 10:61-65.

PO's expert also agrees that “responsive to” does not mean that the input for signaling user acceptance may only be displayed *after* the user designates a roof structure. Ex. 1014, 42:3-5 (“It doesn't matter when buttons are provided on a graphical user interface.”), 47:19-22 (“The providing of a

computer input could be already on the interface but that input must be capable of signaling user acceptance of the building roof structure.”). Instead, as PO’s expert acknowledges, what the claim requires is that “signaling by the user acceptance has to occur after it receives the designation, and in response to its receiving the designation, it’s signaling to confirm the designation of the building roof structure.” *Id.*, 48:1-5. Thus, the computer input (*e.g.*, the “confirm selection” button in Figures 4A-4C of the ’800 patent) must be capable of signaling user acceptance responsive to a designation by the user—*i.e.*, it must be capable of accepting a new designation provided by the user.

Abhyanker’s marker locking feature and “lock pushpin” button are clearly responsive to a designation of a location according to the explanation provided by PO’s expert, and consistent with the embodiment of the ’800 patent. Abhyanker expressly teaches that before the marker locking feature (as embodied in the lock pushpin option) is activated, users may select and relocate markers or pushpins on the map. Ex. 1005, [0070], [0095]. After a marker locking request is processed (*e.g.*, after the user activates the “lock pushpin” option), the marker is “secure[d] ... from future relocations.” *Id.*, [0095]; *see also id.*, [0071] (“[A]t least some pushpins in the map may be secured from movement by the user.”). Thus, the marker locking feature/lock

pushpin option lock the position of a marker or pushpin in its present location, responsive to any prior relocation by other users, and signals user acceptance of that location by preventing future relocation. Indeed, Abhyanker's "lock pushpin" option that implements the marker locking feature mirrors the '800 patent's "confirm selection" button. *Compare* Ex. 1001, Fig. 4B *with* Ex. 1005, Fig. 9.

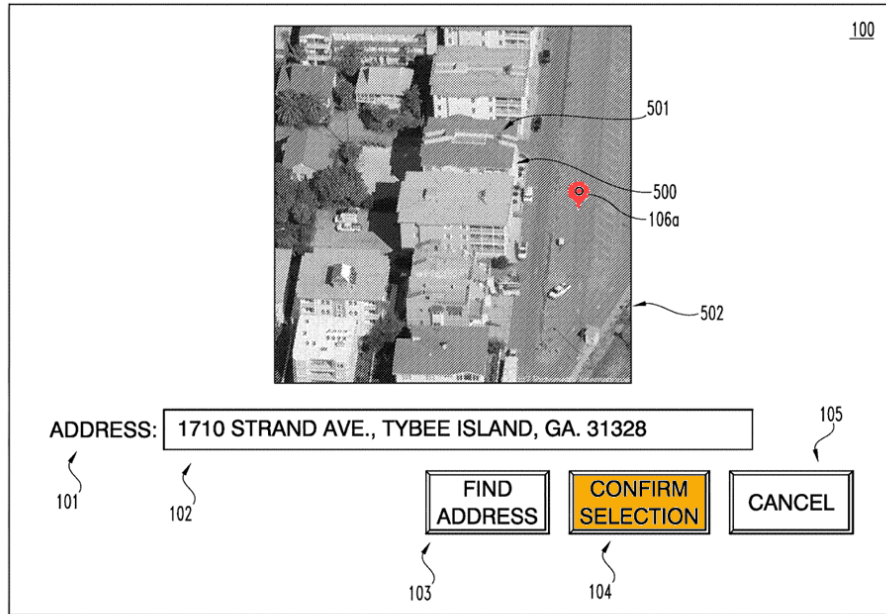


Fig. 4B

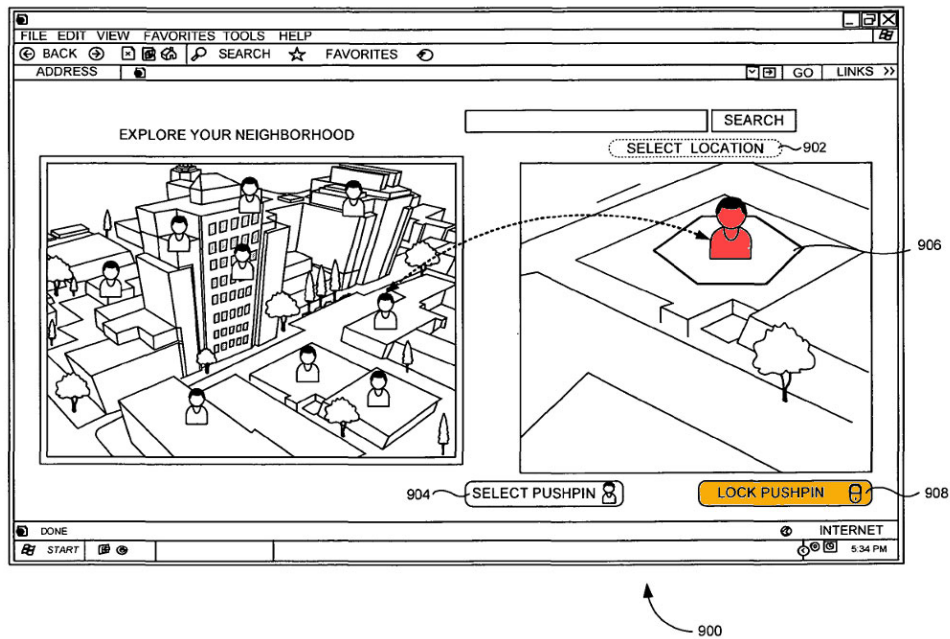


FIGURE 9

PO alternatively argues that Abhyanker's marking locking is not "responsive to" a designation of a roof structure because it occurs before any user relocates a marker. POR 24. This argument relies on a misreading of Figure 11 of Abhyanker. PO contends that Figure 11 shows that the marker locking operation "is performed in operation 1110 of Figure 11A," but the "drag-and-drop feature is performed in operation 1132 of Figure 11C." POR 24. However, Figure 11 of Abhyanker only reflects *one* embodiment, and is not an embodiment Petitioner relies on. Further, Figure 11 does not state that the markers that are relocated in operation 1132 are *the same markers* that were locked in operation 1110. Operations 1110 and 1112 describe how a user may activate a marker locking request to control future relocations of a particular marker. *See* Ex. 1005, Fig. 11A. However, Abhyanker's interface provides *multiple* markers, including other markers that have not yet been claimed. For example, operation 1108 generates a request that "identifies marker not claimed by any user in the mapping environment." *Id.* Operation 1132 then states generally that the drag and drop algorithm "enables a user to sequentially and/or concurrently relocate markers in the mapping environment." *Id.*, Fig. 11C. Operation 1132 does not refer to "the marker" from operation 1110, nor does Figure 11 otherwise suggest that the marker

locked in operation 1110 is among the markers that may be relocated in later operations. In any event, as described above, Abhyanker expressly teaches that markers may be relocated *before* the marker locking feature is activated, such that the marker locking is responsive to those relocations.

**V. GROUND 1: PERSHING-789 RENDERS OBVIOUS
DEPENDENT CLAIMS 9 AND 14**

PO incorrectly argues that Pershing-789 does not disclose an outline drawing super-imposed on a nadir image, as required by dependent claims 9 and 14. POR 29-31.

PO's argument relies on its assertion that Pershing-789's "scale marker" cannot be an outline drawing. But PO merely argues that Pershing-789's scale marker "indicates the scale of the physical length shown in the image," POR 30, which has no bearing on whether or not it is displayed as an outline of a roof structure. PO's expert simply repeats this same argument verbatim. Ex. 2031, ¶90. PO and its expert acknowledge that Pershing-789 expressly teaches that the scale marker is presented "on the image itself," *i.e.*, super-imposed. POR 30; Ex. 2031, ¶90 (quoting Ex. 1004, ¶32). Further, they do not dispute that Pershing-789 separately teaches providing an outline drawing of a roof structure showing dimensions, as required by dependent claim 2 of the '800 patent. *See* Pet. 36-37; Ex. 1004, [0038], Fig. 5C. The

Petition explains that Pershing-789's outline drawing may be super-imposed on the image itself, in light of Pershing-789's express disclosure of superimposing visual indications of distance (*e.g.*, a scale marker). Pet. 56-57. Neither PO nor its expert addresses this application of Pershing-789's teachings.

**VI. GROUND 2: PICTOMETRY RENDERS OBVIOUS
DEPENDENT CLAIMS 9 AND 14**

PO also incorrectly argues that Pictometry does not disclose an outline drawing super-imposed on a nadir image. POR 32-33. PO simply states, in a conclusory fashion, that Pictometry's "measuring tools allow a user to make certain measurements of objects in an image," but "Pictometry does not teach or suggests superimposing an outline drawing on a roof structure." POR 33. PO's expert repeats the same argument. Ex. 2031, ¶92. But neither PO nor its expert addresses the specific disclosures from Pictometry relied upon in the Petition, or the reasoning provided for the combination.

The Petition relies on Pictometry's distance and annotation tools, which expressly teach superimposing annotations and other information on an image, and can be used to "analyze any house [or] building." Pet. 63-64; Ex. 1008, 114, 116. Pictometry also expressly teaches that these tools may be used to draw lines around a "parcel," thus defining the outline of that parcel,

and then displaying information such as square footage and area. Pet. 64; Ex. 1008, 116. The Petition then explains that in the proposed combination, Pictometry’s annotation tools would be used to analyze roof structures—including by drawing an outline around a roof structure (*i.e.*, a “parcel”) to determine measurements, as expressly taught by Pictometry. Pet. 64-66; *see also* Ex. 1003, ¶¶122-126. PO and its expert do not respond to any of these specific disclosures in Pictometry, or Petitioner’s analysis in applying Pictometry’s teachings to Pershing-789.⁵

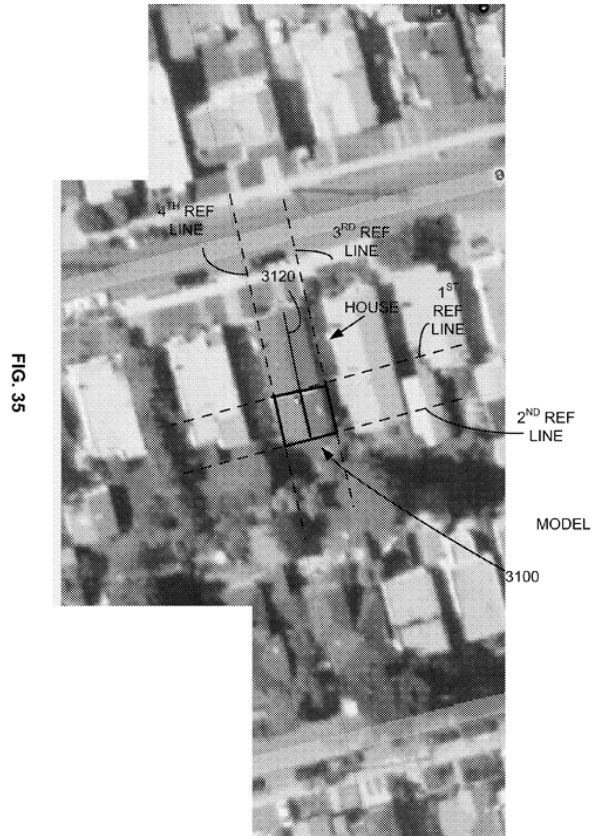
VII. GROUNDS 3: KENNEDY RENDERS OBVIOUS DEPENDENT CLAIM 2

PO argues that Kennedy does not disclose an outline drawing of a roof because Kennedy’s sizing tool “merely ... enables the user to make measurements on an object in an image.” POR 34. But PO does not address the actual disclosures in Kennedy describing and illustrating its sizing tool and application thereof.

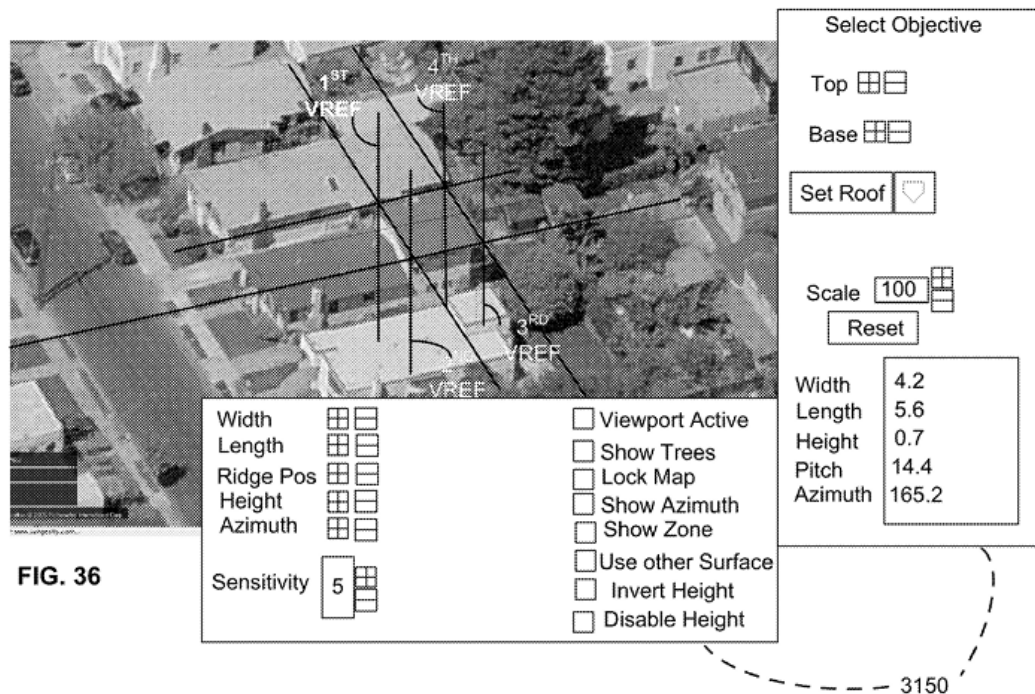
As explained in the Petition, Kennedy discloses a “sizing tool” that may be superimposed on an aerial image to determine dimensions of a surface

⁵ PO also argues that the Petition provides an “unsupported and conclusory” reliance on Bailey. POR 33. PO is referring to a clear typographical error in the Petition, which inadvertently refers to Bailey instead of Pictometry. *See* Pet. 64. The Petition is clear that Ground 2 relies on Pictometry, not Bailey.

(such as a roof). *See* Pet. 68; Ex. 1009, [0058], [0110]. As shown in several figures, including Figures 35 and 36, Kennedy's sizing tool is displayed as an outline of the roof structure to be measured.



Id., Fig. 35, [0188].



Id., Fig. 36, [0189]; *see also, e.g., id.*, Figs. 10-12 (additional examples showing the sizing tool determining an outline or boundary of a roof).

PO argues that an outline drawing of a roof must “include all of the outer edges of the roof structure.” POR 34. But neither PO nor its expert explains why Kennedy’s sizing tool cannot include all such outer edges. They both merely assert, without any explanation, that Kennedy’s sizing tool is not, and does not enable a user to create, an outline drawing of a roof structure. POR 34; Ex. 2031, ¶93. Contrary to these bare assertions, Kennedy expressly teaches that one embodiment of its sizing tool “comprises a 2D rectangle with predetermined height and width ... overlaid over the image of an object. ...

The dimensions (height & width) of the first model can be adjusted to match the dimensions of the object.” Ex. 1009, [0121]. Thus, in this example, Kennedy’s sizing tool is a rectangular outline that may be sized to match the dimensions (*i.e.*, the outer edges) of a roof structure being measured. In this embodiment, Kennedy’s sizing tool comprises an “outline drawing” even under PO’s interpretation of that term.

Date: February 16, 2024

By: /s/ Jim Glass

James M. Glass (Reg. No. 46,729)
QUINN EMANUEL URQUHART &
SULLIVAN LLP
51 Madison Avenue, 22nd Floor
New York, NY 10010
Email: jimglass@quinnemanuel.com;
seangloth@quinnemanuel.com
Phone: 212-849-7000
Fax: 212-849-7100

Counsel for Petitioner

CERTIFICATE OF LENGTH (37 C.F.R. §§ 42.24(D))

The undersigned hereby certifies that, according to the word-processing system used to prepare the foregoing document, this document has 5,446 words and thus complies with the applicable word limit.

Date: February 16, 2024

By: /s/ Ron Hagiz

Ron Hagiz

QUINN EMANUEL URQUHART &
SULLIVAN LLP

51 Madison Avenue, 22nd Floor

New York, NY 10010

Phone: 212-849-7000

Fax: 212-849-7100

Counsel for Petitioner

CERTIFICATE OF SERVICE (37 C.F.R. §§ 42.6(E), 42.105(A))

The undersigned hereby certifies that on February 16, 2024 a copy of this reply and supporting exhibits were served upon the following lead and backup counsel for Patent Owner via electronic mail at

PTAB@sternekessler.com:

Michael D. Specht (Lead Counsel)	mspecht-PTAB@sternekessler.com
Jonathan Tuminaro (Back-up Counsel)	jtuminar-PTAB@sternekessler.com
Richard M. Bemben (Back-up Counsel)	rbemben-PTAB@sternekessler.com
Steven M. Pappas (Back-up Counsel)	spappas-PTAB@sternekessler.com
Jennifer Meyer Chagnon (Back-up Counsel)	jchagnon-PTAB@sternekessler.com

Date: February 16, 2024

By: /s/ Ron Hagiz

Ron Hagiz
QUINN EMANUEL URQUHART &
SULLIVAN LLP
51 Madison Avenue, 22nd Floor
New York, NY 10010
Phone: 212-849-7000
Fax: 212-849-7100

Counsel for Petitioner