

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

XACTWARE SOLUTIONS, INC.
Petitioner

v.

EAGLE VIEW TECHNOLOGIES, INC.
Patent Owner

Case No. IPR2016-00590

Patent No. 8,818,770

PATENT OWNER'S RESPONSE

NEARMAP-1042
Nearmap US, Inc. v. Eagle View Technologies Inc.
IPR2022-00734

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PATENT OWNER'S EXHIBIT LIST

Exhibit No.	Description	Previously Submitted
2001	Weisstein, Eric W., "Combinatorics," From MathWorld - A Wolfram Web Resource, http://mathworld.wolfram.com/Combinatorics.html	X
2002	Transcript of telephonic conference call before the Patent Trial and Appeal Board, June 27, 2016	X
2003	Declaration Of Adam R. Alper In Support Of Motion To Appear Pro Hac Vice On Behalf Of Patent Owner	X
2004	Product Reference Guide 10/15/2008 (EV000144)	
2005	EVT Internal customer quality survey (EV045631)	
2006	Reference Guide: For Measuring Technicians, 10/15/2008 (EV000236)	
2007	Declaration of Dr. Chandrajit L. Bajaj (Under Seal)	
2008	Declaration of Dr. Chandrajit L. Bajaj (Redacted)	
2009	Dr. Chandrajit L. Bajaj's CV	
2010	Not Used	
2011	Declaration of Chris Johnson	
2012	2009 through 2012 revenue data (EV01427936)	
2013	2013 revenue data (EV043428)	
2014	2014 revenue data (EV01427938)	
2015	2015 revenue data (EV01427937)	
2016	Declaration of Jared Barcenas	
2017	Deposition of Schuch from October 2016	
2018	Deposition of Schuch from November 2016	
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2020	Aerial Measurement Reports: Uncovering the Hidden Costs of DIY Tools, Eagleview Case Study: Insurance, http://www.eagleview.com/Portals/0/PortalContent/PDF/CS-117EagleViewvsDIYIns-Jan13-Web.pdf	
2021	EagleView and Xactware team up to revolutionize roof dimensioning, http://www.xactware.com/en-us/company/news/archives/2009/eagleview-and-xactware-team-up-to-revolutionize-roof-dimensioning/	
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2025	One small company reinvents a \$30 billion market, CNN Money, http://money.cnn.com/2011/12/09/smallbusiness/eagleview/	
2026	Roof Consultants Utilize Aerial Measurement Technology to Provide Expert Service, Shear Bull, Apr 2011, Vol. 24-4, http://pbcroofers.com/newsletters/PBCR_news_11April.pdf	
2027	Eagle Eye, CalBiz Journal, http://www.calbizjournal.com/eagleviewmeasurements/	

2028	Counting on the Perfect Measurement Every Time, Eagleview Case Study: Contractors, http://www.eagleview.com/Portals/0/PortalContent/PDF/CS-116PhoenixRoofingCaseStudy-Jan13-web.pdf	
2029	Acquisition of EagleView Technology Corp., Verisk Analytics, Jan. 15, 2014, http://phx.corporate-ir.net/External.File?t=1&item=VHlwZT0yfFBhcmVudElEPTUwODYxNjl8Q2hpbGRJR01Mjk4MDA=	

I. INTRODUCTION

Petitioner has failed to establish by a preponderance of evidence that any of the instituted claims are unpatentable. First, Petitioner primarily relies on a reference by Avrahami that is fundamentally different from the claimed invention of the '770 patent. The '770 Patent claims require a “first visual marker that is moveable by a user,” but the seed point in Avrahami—which Petitioner points to as the “first visual marker”—does not move. Instead, Avrahami states unequivocally that a user manually clicks on the center of a roof plane to generate the seed point, locking that seed point in place, and thereafter the automated processes in Avrahami takes over, without further user intervention. None of the automated processes describe or disclose that the first visual marker is moved by a user, which is a fundamental aspect of the '770 patent not found in Avrahami. Second, the secondary references relied upon by Petitioner are directed to solving disparate problems and would not be combined by a person of ordinary skill in the art in the manner suggested. Third, significant objective indicia of non-obviousness exists due to the commercial success and industry praise garnered by products embodying the '770 patent—in fact, Petitioner itself has repeatedly acknowledged the novelty of Patent Owner's patents, and only now changes its

story, after its bid to acquire Patent Owner failed and it has been sued for wrongfully taking Patent Owner's technology without permission.

And while Patent Owner's positions are supported by the testimony of a highly experienced expert in this area, Petitioner's expert provides no opinions that the claims of the patents are disclosed in the prior art or are invalid. To the contrary, Petitioner's expert admitted key facts in his deposition confirming that numerous elements of the claims are missing in the prior art. At bottom, Petitioner cannot carry its "burden of proving a proposition of unpatentability by a preponderance of the evidence." 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

Accordingly, the Board should uphold the patentability of all of the instituted claims.

II. OVERVIEW OF U.S. PATENT NO. 8,818,770

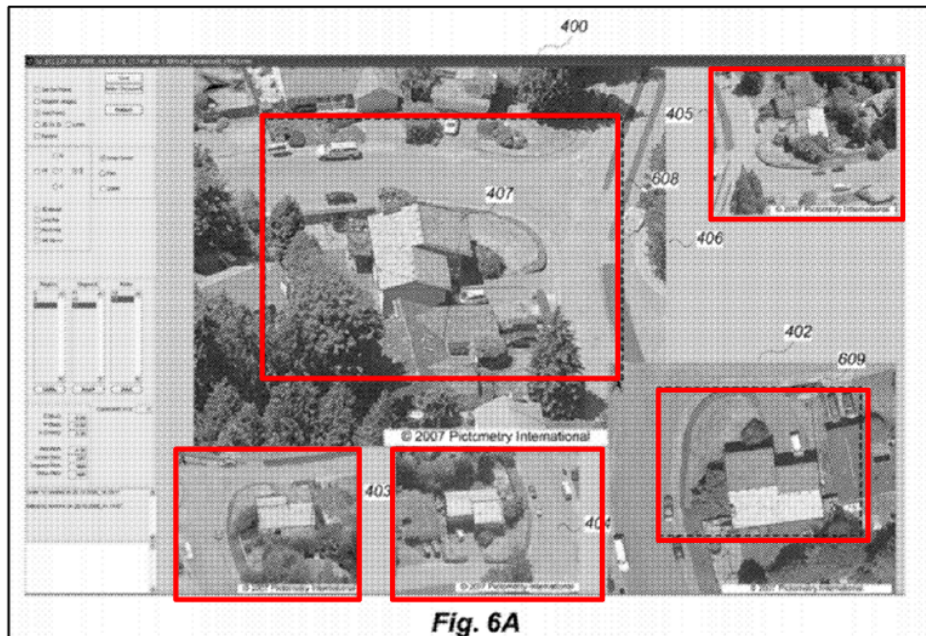
U.S. Patent No. 8,818,770 (the "'770 patent") is directed to "systems and methods for estimating construction projects, and more particularly, to such systems and methods for determining roof measurement information based on one or more aerial images of a roof of a building." *See* Ex. 1001 ('770 patent) at 1:16–20. In particular, the '770 Patent describes a first visual marker that is movable by a user as part of the user interface and a second visual marker that is displayed

based on that movement. *Id.* at claims 1, 19; *see also id.* at 9:54–61. Figures 6A–6C (reproduced below) sets forth an embodiment of these markers.

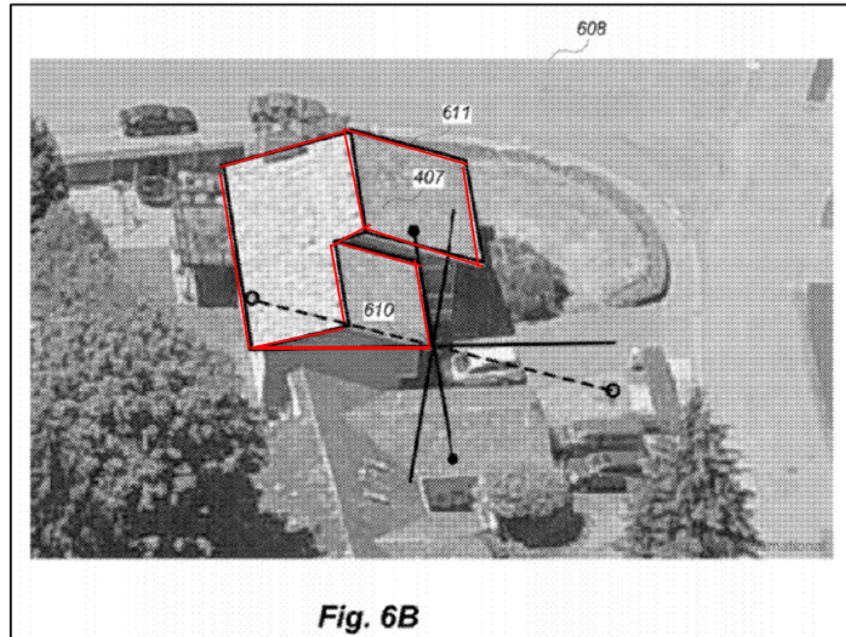
The '770 Patent claims and specifications describe how the movement of the first visual marker is used to improve the 3D model and model generation process. Claim 1 recites a “first visual marker that is **moveable** by a user,” “**moving** the first visual marker with respect to the first aerial image of the roof structure to a first location in response to input from the user” and thereafter “displaying a location of a second visual marker on the roof structure of the building in the second aerial image of the roof structure based on an indication received from the stored data in the memory of the first location on the displayed first aerial image **to which the user had moved the first visual marker.**” Ex. 1001 at claim 1. Several important aspects of the invention of the '770 Patent are reflected in this language.

First, the “visual marker” being referred to in this claim element is one that is “**moveable** by a user in the same display window as the first aerial image,” and is, in fact, moved by the user, as claim 1 requires “**moving** the first visual marker . . . in response to input from the user.” *See* Ex. 1001 at claim 1. The position of the first visual marker must therefore be changed from an initial location to another by the user. This is an important aspect of the invention of the '770 patent because it provides an “interactive user interface” for “pitch

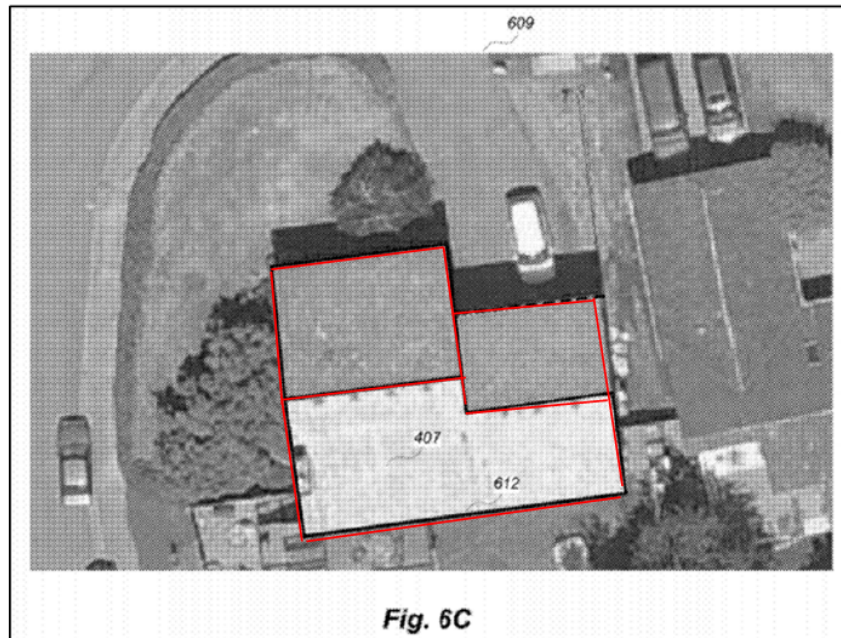
determination, feature identification, and model review and/or correction.” *See* Ex. 1001 at 2:15–19. For example, Figure 6A shows that the user interface can include the display of multiple images of a roof, with “each of the images 402-406 provid[ing] a different view of the building roof 407.” *See id.* at 9:43–47; *see also* Fig. 6A (with red annotations identifying 402-407) *infra*.



Ex. 1001 at Figure 6A. The '770 Patent describes an example embodiment wherein the first visual marker is wire frame 611 (annotated in red in Figure 6B below) generated by the operator who uses a drawing tool to trace the outline of the roof 407:



Ex. 1001 at Figure 6B; *see also id.* at 14:13–15 (“In the illustrated embodiment, the operator uses the drawing tool 610 to trace or outline planar sections of the roof 407, leading to the generation of wire frame 611.”). As the operator specifies roof sections in this manner, corresponding changes are made to a second visual marker, *i.e.*, wire frame 612, in a second image of the same roof (annotated in red in Figure 6C below):



Ex. 1001 at Figure 6C; *see also id.* at 14:36–41 (“Changes that the operator makes to wire frame 611 are concurrently displayed by the roof estimation system as wire frame 612 in image portion 609. For example, if a new planar roof section is added by the operator to wire frame 611, the new planar roof section is automatically displayed in wire frame 612.”) The ’770 Patent explains by using the first and second visual markers in this manner, “the operator obtains feedback regarding the correctness and/or accuracy of the 3D model or other aspects of the model generation process, such as image registration and pitch determination.” *Id.* at 14:41–46. This improvement in correctness and/or accuracy, in turn, improves the quality of the roof estimate report that can be generated including “information about total area of the roof, identification and measurement of ridges and/or valleys

of the roof, and/or different elevation views rendered from the 3D model.” *Id.* at 6:38–46.

During prosecution of the '770 Patent, the applicants relied on Figures 6A–C and the accompanying descriptions in the specification to distinguish the claims over the prior art Kennedy reference¹ because Kennedy failed to disclose “displaying a location of a second visual marker on the roof structure of the building in the second aerial image of the roof structure based on an indication received from the stored data in the memory of the first location on the displayed first aerial image to which the user had moved the first visual marker”:

Wire frame 611 in Figure 6B represents a “first visual marker” of claim 2, while wire frame 612 in Figure 6C represents a “second visual marker” of claim 2. ***Portions of the wire frame 611 are moved by the operator with reference to Figure 6B and corresponding movements are made by the computer system, to the wire frame 612 that is displayed as a projection overlying image 609 in Figure 6C.*** Examples of these steps and features are described in detail in application as filed, page 25, paragraphs 84-86.

In contrast, the user in Kennedy must manually place the markers on the corresponding corners in both the first and second displayed images.

¹ U.S. Patent Publication No. 2011/0205245 (“Kennedy”).

Ex. 1009 (11/21/2013 Response to Action) at 10; *see also* Ex. 1010 (4/16/2014 Response to Action) at 3. Accordingly, the prosecution history of the '770 Patent confirms that the second visual marker is displayed “based on an indication received from the stored data in the memory of the first location on the displayed first aerial image *to which the user had moved the first visual marker.*” Ex. 1001 at claim 1. Thus, when read as a whole, claim 1 requires movement of the first visual marker and display of a second visual marker “based on an indication . . . of the first location on the displayed first aerial image to which the user had moved the first visual marker.”

III. BOARD'S DECISION TO INSTITUTE REVIEW

As illustrated by the table below, the Board instituted *inter partes* review (“IPR”) with respect to the following grounds of unpatentability in the Petition that include Yair Avrahami et al., “Extraction of 3D Spatial Polygons Based on the Overlapping Criterion for Roof Extraction from Aerial Images,” IAPRS, Vol. XXXVI, Part 3/W24, Vienna, Austria, Aug. 29–30, 2005 (“Avrahami”), AppliCad Product Bulletin, “Key features of our Roofing Software,” November 2002 (“AppliCad”), and U.S. Patent Publication US 2007/0220174 A1 to Abhyanker, September 20, 2007 (“Abhyanker”).

Ground	Reference(s)	Basis (35 U.S.C.)	Claims Being Reviewed
1	Avrahami, AppliCad	§ 103(a)	1, 11, and 14

3	Avrahami, AppliCad, and Abhyanker	§ 103(a)	10 and 19
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Patent Owner, relying on the detail of the prior art ignored by Petitioner and the declaration of Dr. Chandrajit L. Bajaj, establishes not only that the prior art fails to disclose what the Petitioner claims it does, but that combining the art as proposed by the Petitioner would be inappropriate and fail to yield the claimed inventions.

IV. CLAIM CONSTRUCTION

The Board interprets claim terms by applying the broadest reasonable construction in the context of the specification in which the claims reside. 37 C.F.R. § 42.100(b). However, “claims should always be read in light of the specification and teachings in the underlying patent,” *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260 (Fed. Cir. 2010), and the construction “must be consistent with the one that those skilled in the art would reach.” *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015). “The PTO should also consult the patent’s prosecution history in proceedings in which the patent has been brought back to the agency for a second review.” *Id.* “While the Board must give the terms their broadest reasonable construction, the construction cannot be divorced from the specification and the record evidence.” *In re NTP, Inc.*, 654

F.3d 1279, 1288 (Fed. Cir. 2011); *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d at 1298.

- A. **“displaying a location of a second visual marker on the roof structure of the building in the second aerial image of the roof structure based on an indication received from the stored data in the memory of the first location on the displayed first aerial image to which the user had moved the first visual marker” (claim 1)**

Petitioner's proposed construction of this term is incorrect and should be rejected because no construction is needed. The Board has already confirmed that no construction of this term is necessary. Paper 12 (Institution Decision) at 9. The term is easily understood by its plain and ordinary meaning, and no further construction is necessary. *See, e.g., Summit 6, LLC v. Samsung Elecs. Co.*, 802 F.3d 1283, 1291 (Fed. Cir. 2015) (“Because the plain and ordinary meaning of the disputed claim language is clear, the district court did not err by declining to construe the claim term.”); *Ex Parte Fenner Inv., Ltd.*, No. 2015-006923, 2015 WL 5317395, at *4 (Aug. 27, 2015) (finding that “Examiner erred in construing the claims” where intrinsic evidence did not “warrant[] deviation from [the] plain and ordinary meaning.”).

Petitioner's proposed construction is overly broad and improperly reads words out of the claim. Specifically, Petitioner attempts to read the bolded claim language shown below out of the claim, *i.e.*, that the “location of a second visual

marker” is “based on. . . the first location on the displayed first aerial image to which the user had moved the first visual marker”:

Claim Term	Petitioner's Proposed Construction
“displaying a location of a second visual marker on the roof structure of the building in the second aerial image of the roof structure <i>based on an indication received from the stored data in the memory of the first location on the displayed first aerial image to which the user had moved the first visual marker</i> ” Ex. 1001 at claim 1. ²	“a second visual marker is displayed on the roof structure of the building in the second aerial image at the same location as the first visual marker in the first aerial image” Paper 7 at 6.

Petitioner's attempt to rewrite this claim term is improper and should be rejected. *See Merck & Co. v. Teva Pharm. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005) (“A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.”); *Power Mosfet Techs., L.L.C. v. Siemens AG*, 378 F.3d 1396, 1410 (Fed. Cir. 2004) (“[I]nterpretations that render some portion of the claim language superfluous are disfavored.”); *Ex Parte Reinhold Burr*, No. 2009-002693, 2009 WL 3151048, at *1 (B.P.A.I. Sept. 29, 2009); *505 Games, Inc. v. Babbage Holdings, Inc.*, IPR2014-00954, Paper 24 at 6 (Dec. 15, 2014). As explained in Section II above, the importance of displaying

² Emphasis supplied unless otherwise noted.

the second visual marker “based on an indication . . . of the first location on the displayed first aerial image to which the user had moved the first visual marker” is reflected in the '770 patent file history, including where the applicant distinguished the prior art at issue by explaining that the prior art required a user to “manually interact with the second image to place the markers on the corresponding corners in the second displayed image of the roof.” *See* Ex. 1010 at 3; *see also* Ex. 1009 at 10–11 (“[p]ortions of the wire frame 611 are **moved** by the operator with reference to Figure 6B and **corresponding movements are made by the computer system.**”). Accordingly, Petitioner has no intrinsic support for its proposed construction, particularly where the plain meaning states that the marker must be movable and moved. Instead, this term does not require any further construction as the language of the claim plainly requires the display of the location of the second visual marker must be “based on . . . the first location on the displayed first aerial image to which the user had moved the first visual marker.”

Indeed, the Board in its Initial Determination found that “[t]he step of ‘displaying a location of a second visual marker’ . . . require[s] or concern[s] . . . the result of the movement of the first visual marker.” Paper 12 at 10; *see also id.* (“the indication ‘of the first location on the displayed first aerial image’ is an indication of the ultimate **placement of the first visual marker in response to the**

user's input."). Thus, the plain language of this term requires no construction and confirms that the first visual marker must be movable and must actually be moved by the operator.

- B. **“display the location of a second visual marker corresponding to the first visual marker on the roof structure of the building in the second aerial image of the roof structure based on the indication received of the location on the displayed first aerial image to which the user had moved the first visual marker” (claim 19)**

Petitioner's proposed construction of this term suffers from the same defect described in Section IV.B. *supra*, as illustrated in the chart below, and should be rejected for the same reasons discussed there:

Claim Term	Petitioner's Proposed Construction
“display the location of a second visual marker corresponding to the first visual marker on the roof structure of the building in the second aerial image of the roof structure <i>based on the indication received of the location on the displayed first aerial image to which the user had moved the first visual marker</i> ” Ex. 1001 at claim 19.	“a second visual marker is displayed on the roof structure of the building in the second aerial image at the same location as the first visual marker in the first aerial image.” Paper 7 at 8.

Petitioner's attempt to read the bolded claim language shown above out of the claim is improper, and no construction is necessary. *See* Section IV.B. *supra*; *Merck & Co. v. Teva Pharm. USA, Inc.*, 395 F.3d 1364, 1372; *Power Mosfet*

Techs. L.L.C. v. Siemens AG, 378 F.3d 1396, 1410; *Ex Parte Reinhold Burr*, 2009 WL 3151048, at *1; *505 Games, Inc.*, IPR2014-00954, Paper No. 24 at 6.

V. THE PETITION FAILS TO ESTABLISH THAT THE '770 PATENT IS UNPATENTABLE

A. The Avrahami Reference

Avrahami is a study of an algorithm for extracting 3D polygons of a roof structure based on two aerial images of the roof. See Ex. 1003 (Avrahami Publication) at Abstract. The reference also presents results of an effort to “examine the algorithm efficiency.” *Id.*

The algorithm describes starting with “a pair of colored aerial images,” including one which Avrahami refers to as the “left” image. See Ex. 1003 at Abstract. From there, the algorithm disclosed by Avrahami is carried out in three stages which are described in Figure 2 and the associated text: (a) manual pointing to “seed points”, (b) “an automatic process for extraction of the roof planes for each seed point”, and finally (c) a “roof extraction stage” where individual roof planes are built into a 3D roof. Ex. 1003 at 44–46; *see also* 46 (“The proposed algorithm consists of three main stages . . .”).

In the first stage, “the operator needs to point at every distinct planar part of the roof *in the left image.*” *Id.* at 43; *see also* 44–46. These points are called “seed points.” See *id.* This is the only portion of the algorithm that accepts user

input. *Id.* at 43 (“This stage defines the algorithm as semi-automatic and from here on the process is fully automatic.”); Ex. 2008 (Bajaj Decl.) ¶ 31.

The second stage is directed to extracting individual “roof planes for each seed point” that the user selected. Ex. 1003 at 46. That is, the second stage is carried out only **once** for each previously-selected seed point and is composed of the sub-steps of (i) “extraction of a bounding polygon in the left image space” (Section 3.1), (ii) “calculation of the estimated height and transformation to the right image space” (Section 3.2), (iii) extraction of a bounded polygon in the right image space” (Section 3.3); (iv) an iterative process of “left and right polygon matching” that overlaps the left and right polygons, so that later, homologous points in the left and right images can be determined (Section 3.4) and (v) extracting the individual spatial polygon that results from the prior steps (Section 3.5). Bajaj Decl. ¶ 32–39. These steps are also fully automatic and require no user-input. Ex. 1003 at 43; Ex. 2008 ¶ 39.

In the final third stage, Avrahami describes creating for the first time a 3D model of a roof by “building the topology between the roof planes.” *Id.* at 46 (Section 4, Fig. 2). During this final stage, no user-input is required. Ex. 1003 at 43; Ex. 2008 ¶ 40. After this stage, the process is complete and there are no further steps and no modifications to the 3D model.

B. Ground 1: The Combination of Avrahami and AppliCad Does Not Render Claims 1, 11, and 14 Obvious

- (i) Neither Avrahami Nor AppliCad Discloses “displaying . . . a graphical user interface . . . and also at least one first visual marker that is moveable by a user” and “moving the first visual marker with respect to the first aerial image of the roof structure to a first location in response to input from the user;” (claim 1)

Petitioner relies solely on Avrahami for this limitation and no other reference. Petitioner is not correct that Avrahami discloses this limitation of claim 1.

Avrahami fails to disclose this limitation because claim 1 of the '770 Patent sets forth a moveable first visual marker on a first aerial image that is actually moved to a first location in that image by a user. An embodiment from the '770 patent specification pertaining to such movement is discussed in Section II above and is reproduced here:



Ex. 1001 at Figures 6B, 6C. In Figure 6B, the first visual marker is the wireframe model, which is moved by the user and the location of the second visual marker (the wireframe of Figure 6C) is displayed based on that movement.

Petitioner claims that the “seed point” of Avrahami is the claimed “first visual marker.” See Paper 7 (Petition) at 9 (“the system stores the location of the seed points (first visual markers) in memory”). In particular, Petitioner points to the seed point in the left image of Avrahami, which is created when a user clicks on the center of a roof plane, as the first visual marker. *Id.* (“a user manually points to the center of a well-defined area in the first image and selects a seed point. . . . In doing so, the user utilizes a first visual marker”). But the Petition contains no explanation or assertion that this visual marker “is moveable by a user,” as required by the claims. Instead, the right hand column on page 13 of the Petition, which contains the alleged disclosure of this element in Avrahami does not mention the words “first visual marker” or “moveable by a user” at all. It merely states that Avrahami discloses “a method for receiving an indication of a feature of the building shown in the first aerial image by clicking on a location in the first image to define a seed point in that image” and that “Figure 5 illustrates the seed points that are set by the user in the graphical user interface.” Paper 7 at 13. Page 9 of the Petition similarly states that “a user manually points to the center

of a well-defined area in a first image and selects a seed point.” But these characterizations of Avrahami are not assertions that the seed points are ***movable by a user***, as required by the plain language of the claims. For this reason alone, Petitioner's challenge must fail.

Similarly, the Petition fails to identify “moving the first visual marker with respect to the first aerial image of the roof structure to a first location in response to input from the user” in Avrahami. The entirety of Petitioner's argument as to this claim element appears on page 14 of the Petition and states:

Avrahami discloses that the user manually points to and identifies seed points in the first aerial image. *See e.g.*, Section 1, p. 43, and Section 4, p. 46. These seed points are generally at the central area of each roof plane.

But Avrahami's “point[ing] to and identif[y]ing seed points” does not constitute movement of a first visual marker for at least two reasons. First, the claims require a first visual marker to be present and then subsequently moved. Pointing to and clicking on a location to identify a seed point cannot be “moving a first visual marker” because prior to the user's click, the seed point does not exist, and thus there is nothing to move. Ex. 1003 at 43; Ex. 2008 ¶ 56. Moreover, once placed, the seed point in the left image of Avrahami is never moved by the user and Avrahami sets forth no mechanism for doing so. As Avrahami expressly states,

there is only a single interaction by the user, when initial “seed points” for individual roof planes are selected in the “left image,” after which the process is fully automatic. Ex. 1004 (Applicad Publication) at 43 (“The algorithm consists of several consecutive stages: 1) manual pointing to the center of a well-defined area in the left image space by an operator. This stage defines the algorithm as semi-automatic and *from here on the process is fully automatic.*”), 44; Ex. 2008 ¶ 56. Indeed, as Avrahami, Petitioner, and both sides’ experts all confirm, the seed point is used by the Avrahami system to automatically create a roof outline in the left image. Ex. 1003 at 43-46; Paper 7 at 13; Ex. 1008 (Schuch Declaration) ¶ 40; Ex. 2008 ¶ 31–42, 56. As the Petition explains, after the user creates the seed point, “[t]he system then segments the area and extracts a bounded polygon *in the first image.*” Paper 7 at 9 (emphasis added); Ex. 1008 ¶ 40. According to Petitioner and its expert, the Avrahami “system stores the location of the seed points (first visual markers) in memory.” Paper 7 at 9; Ex. 1008 ¶ 40. Thus, the first location of the seed point (which the Petitioner points to as the “first visual marker”) never moves in Avrahami.

Faced with these facts, Petitioner attempted to shift its position through its expert at his deposition, claiming for the first time that seed points could be repositioned to correct for failures in a later, automated phase of the Avrahami

algorithm. Specifically, Petitioner's expert claims that the process of "merging" pointers and polygons in Avrahami could involve repositioning seed points. Ex. 2018 (Schuch Dep.) at 23:6-16. As an initial matter, this argument about an alleged "second process" was never set forth in the Petition, and thus Petitioner cannot shift positions to rely on it. 37 C.F.R. § 42.22(a)(2); *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) (refusing to consider arguments not in Petition).

Moreover, Petitioner's expert repeatedly admitted during his deposition that Avrahami does **not** disclose any repositioning of the seed points in the context of "merging" or otherwise:

Q. Does the Avrahami reference state that a user manually repositions the seed point?

A. ***It does not say that.***

Ex. 2018 at 13:8-10.

Q. Okay. But Avrahami -- whenever Avrahami was creating this system and then as reported in the Avrahami reference, there was no -
- there's no indication of moving or repositioning a seed point on any of the images, correct?

A. That is not spelled out. That's correct.

Ex. 2018 at 26:24-27:5. Indeed, Petitioner's expert's discussion of repositioning seed points was purely speculation on his part, as he admitted "that's how [he] would do it" if he were to try to correct for failures in the automatic phase of the process but acknowledged that "Avrahami does not state that":

So you just said a moment ago, "additional information has to be introduced into the process by the operator for that to happen."

Alright. ***By saying that are you referring to movement of a seed point?***

A. That is how I would do it.

Q. Okay. That's how you would do it.

A. Yes.

Q. But how about Avrahami, isn't it correct that in Avrahami there is no subsequent movement of seed points after the initial introduction of a seed point at the beginning of the process?

A. Avrahami does not state that.

Ex. 2018 at 25:22-26:10; *see also id.* at 23:6-16. Accordingly, his speculative, conclusory statements deserve no weight. *Harmonic, Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363-64 (Fed. Cir. 2016) (affirming Board determination that claims are patentable where asserted prior art reference in obviousness combination contained "no express teaching of [the claim] limitation" and Petitioner's expert testimony "add[ed] nothing beyond the conclusory statements in [Petitioner's]

petition”); *August Tech. Corp. v. Camtek, Ltd.*, 655 F.3d 1278, 1290 (Fed. Cir. 2011) (concluding that a prior art combination does not render the asserted claims obvious as a matter of law where the combined prior art reference “does not supply the missing element for purposes of the obviousness analysis”).

- (ii) **Neither Avrahami Nor AppliCad Discloses “displaying a location of a second visual marker on the roof structure of the building in the second aerial image of the roof structure based on an indication received from the stored data in the memory of the first location on the displayed first aerial image to which the user had moved the first visual marker” (claim 1)**

As an initial matter, nothing in Avrahami suggests or teaches “displaying a location of a second visual marker on the roof structure of the building in the second aerial image of the roof structure” Ex. 2008 ¶ 58. Although Avrahami includes illustrative Figures 1, 3, and 5 that show side-by-side images of a roof, those are included in the paper to graphically illustrate the internal operation of the Avrahami algorithm. Ex. 1003 at 46–48. The mere presence of those figures does not teach or disclose that the images in the figures should be displayed during performance of the algorithm. Ex. 2008 ¶ 58. Though Petitioner relies on language from Avrahami stating that two images are required to perform the algorithm (Paper 7 at 15-16), nowhere does Avrahami state that that the second aerial image is actually displayed. Ex. 2008 ¶ 58.

Indeed, the Avrahami algorithm only displays a single image (the “left” image) to the user for selecting a roof plane by placing a seed point on that plane. Ex. 1004 at 43 (“manual pointing to the center of a well-defined area in the **left image** space by an operator”). The remainder of the steps in the algorithm for creating a spatial polygon—which Avrahami explicitly lists on page 43—are “fully automatic” and do not include a step of displaying any image. *Id.* (“... from here on the process is fully automatic.”); Ex. 2017 (Schuch Dep.) at 56:11–16 (agreeing that the initial seed point is only given in the left image). Indeed, there is no need in Avrahami to display both images, as there is no opportunity for user interaction with the modeling process after the placement of the initial “seed point” and generation of the model. Ex. 2008 ¶ 58.

Critically, Petitioner’s expert Mr. Schuch does not dispute that Avrahami fails to disclose this limitation. Specifically, Mr. Schuch admits that there is no discussion of software for graphically displaying images or any sort of visualization:

Q. So, is it fair to say that in Avrahami there's no discussion of whether the authors created display software, basically, the code that would display the -- graphically display the various stages of the algorithms and processes that they were developing?

A. That's correct. Everything that is written in this document suggests that it can be done without visualization.

Ex. 2017 at 73:20–74:8; *see also* 32:3–12. At bottom, there is no specific disclosure showing that the images are displayed, and Petitioner's expert agrees that Avrahami has no such disclosure. Accordingly, this limitation is not taught or suggested by Avrahami.

The Petition likewise does not argue that Avrahami discloses “displaying a location of a second visual marker . . . based on an indication . . . of the first location on the displayed first aerial image to which the user had moved the first visual marker.” Petitioner's claim chart asserts the following for this element:

Avrahami further discloses that a blue asterisk is placed on the location clicked by the user in the first aerial image and an appropriate pointer is automatically transferred to the second image at the same location that the user clicked on in the first aerial image. *See, e.g.*, p. 47 (“In addition, the initial manual (blue asterisk) is shown in the center of every polygon in the left image and the appropriate pointer in the right image, which was **transferred automatically.**”) (emphasis added). This is illustrated in Figures 3 and 5, reproduced below.

Paper 7 at 15. But as explained above, the first visual marker in Avrahami is never moved in response to user input. Instead, as Petitioner acknowledges in the passage quoted above, the seed point is “placed on the location clicked by the

user.” Accordingly, Avrahami does not disclose “displaying a location of a second visual marker . . . based on an indication . . . of the first location on the displayed first aerial image ***to which the user had moved the first visual marker.***” Petitioner apparently recognized this shortcoming of Avrahami and therefore sought to rewrite this claim limitation, ***via*** a claim construction argument, to require merely that “a second visual marker is displayed on the roof structure of the building in the second aerial image at the same location as the first visual marker in the first aerial image.” Paper 7 at 6. The Board correctly rejected that argument, instead holding that the plain language of this claim element does indeed require an indication of “the result of the ***movement*** of the first visual marker.” *Id.* at 10 (emphasis added).

Faced with these facts, as discussed above, Petitioner attempted to shift its position through its expert at his deposition. As explained above, Mr. Schuch announced an entirely new position and argument during his deposition regarding the repositioning of seed points. Ex. 2017 at 23:6-16. But this argument simply does not appear in Mr. Schuch’s declaration, *see* Ex. 1008 at 12-14, and is likewise not in the Petition and therefore should not be considered by the Board. 37 C.F.R. § 42.22(a)(2); *Intelligent Bio-Sys., Inc.* 821 F.3d at 1369. And as explained above, when asked “[d]oes the Avrahami reference state that a user manually repositions the seed point?” Mr. Schuch correctly acknowledged that “[i]t does not say that.”

Ex. 2018 at 13:8-10; *see also id.* at 26:24-27:5 (Schuch acknowledging that “in the Avrahami reference, there was no -- there's no indication of moving or repositioning a seed point on any of the images”).

Although Mr. Schuch identified a portion of Avrahami regarding the dividing of a single spatial polygon into several planar surfaces as support for “repositioning a seed point,” in actuality that part of Avrahami says nothing about repositioning a seed point. Ex. 1003 at 46. And, when Mr. Schuch was asked whether the dividing of a 3D polygon could be accomplished by the placement of a seed point by the user, Mr. Schuch responded that “I don't know how that is done.” Ex. 2018 at 23:6–16. As there is no debate that Avrahami does not disclose movement of seed points, Petitioner's argument must fail.

And in any event, Avrahami's solution explicitly precludes a user from intervening at some later point in the algorithm, as it states that “consecutive stages” of the algorithm begin with “1) the user manual pointing to the center of a well-defined area in the left image space by an operator. This stage defines the algorithm as semi-automatic and ***from here on the process is fully automatic.***” Ex. 1003 at 43 (emphasis added). Therefore, a second, later manual intervention is contrary to Avrahami's requirement that all later steps of the algorithm be “fully automatic.”

At bottom, this limitation is not taught or suggested by Avrahami and Petitioner's expert's newly-added, speculative suggestions to the contrary should be rejected. *Harmonic, Inc. v. Avid Tech., Inc.*, 815 F.3d at 1363-64; *August Tech. Corp. v. Camtek, Ltd.*, 655 F.3d at 1290; *Trintec Industries, Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1297 (Fed. Cir. 2002) (finding claims not anticipated where the prior art did not disclose the claimed use of a computer to create artwork even if a "skilled artisan might possibly use the computer to create the final desired image").

- (iii) **Neither Avrahami Nor AppliCad Discloses “generating and outputting a roof estimate report using a report generation engine, wherein the roof estimate report includes one or more top plan views of a model of the roof annotated with numerical values for corresponding slope, area, or lengths of the edges of at least some of the plurality of planar roof sections of the model of the roof” (claim 1)**

Petitioner relies on both Avrahami and AppliCad for this limitation. As further described below, Petitioner is not correct that these references disclose or suggest this limitation of claim 1.

a) This limitation is entitled to patentable weight:

The Board's institution decision states that because the detailed and specific requirements of the claimed roof report are printed matter, they are not entitled to weight in the patentability analysis. Paper 12 at 10–11. Respectfully, because this

argument was not raised by Petitioner in its Petition, it should not be considered by the Board *sua sponte*. *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016) (“[W]e find no support for the PTO’s position that the Board is free to adopt arguments on behalf of petitioners that could have been, but were not, raised by the petitioner during an IPR.”).

If this issue is nevertheless considered, the limitation of “generating and outputting a roof estimate report,” which includes detailed and specific requirements of the contents of the report, should be given patentable weight under the governing authorities. *In re Gulack*, 703 F.2d 1381, 1385 (Fed. Cir. 1983) (holding that the differences between an invention and the prior art cited against it “cannot be ignored merely because those differences reside in the content of the printed matter”).

“Printed matter is given such weight if the claimed informational content has a functional or structural relation to the substrate.” *In re DiStefano*, 808 F.3d 845, 850 (Fed. Cir. 2015). Here, the test is satisfied. A functional relationship between the claimed report and the underlying method exists because the roof report and its contents are intertwined with, and directly improve the functionality of, the underlying method of roof estimation. As the specification of the ’770 patent confirms, prior to the invention, homeowners would “typically ask several roofing

contractors to provide written estimates to repair or replace a roof on a house” by visiting a home and taking measurements. Ex. 1001 at 1:27–30. However, a variety of factors prevented contractors from timely visiting a home—such as distance, weather, or lack of qualified personnel. *Id.* at 1:35-52. The ’770 patent provides the benefit of obviating the need for a visit all-together by improving the accuracy of generating a three-dimensional model of the roof. A three-dimensional model of a roof alone, however, may not be usable by a contractor to generate a roof repair estimate. To fully obtain the benefits of the utility of the three-dimensional model, a roof report is generated to provide the specific values (set forth in the claim) which are needed by the contractor to estimate the roof repair without visiting the site. Ex. 2018 at 49:4–13 (admitting that, without information such as dimensions, area, and slope, a roof report could not be used to estimate repair cost). Likewise, the usefulness of the roof report is improved by a three-dimensional modeling method that provides accurate results. Ex. 2008 ¶ 61; Ex. 2018 at 50:14–21 (agreeing that a three-dimensional model is needed to generate a roof report with numerical values for slope, area, and lengths). Indeed, the claimed values in the roof report—which are generated from the three-dimensional model—allow for accurate estimation of the roof repair.

The informational content of the report and types of annotations contained in the report are inexorably linked to the method, as the method allows for those values to be accurately derived from aerial images. Ex. 1001 at claim 1. Furthermore, the report improves the method by allowing the user to have an easy to read annotated representation of the three-dimensional model created by the underlying method. These features are critical to the invention of the '770 patent, and far from independent of the system and method used to produce them. *See In re Gulack*, 703 F.2d 1381, 1385 (“[T]he board cannot dissect a claim, excise the printed matter from it, and declare the remaining portion of the mutilated claim to be unpatentable. The claim must be read as a whole.”).

Claim 1 of the '770 patent is fundamentally different from claims where printed matter was not given patentable weight. *See* Manual of Patent Examining Procedure (MPEP) § 2111.05 (Nov. 2015) (“Additionally, where the printed matter and product do not depend upon each other, no functional relationship exists.”). For example, in a case cited by the Board, *In re Ngai*, user instructions included in a chemical kit were not found to have patentable weight because they “in no way depend[] on the kit” and did not “interrelate with the kit”. *In re Ngai*, 367 F.3d 1336, 1339 (Fed. Cir. 2004). In another case cited by the Board, *Ex parte Nehls*, the claim limitation was directed to specific kinds of “SEQ ID NOs” that could be

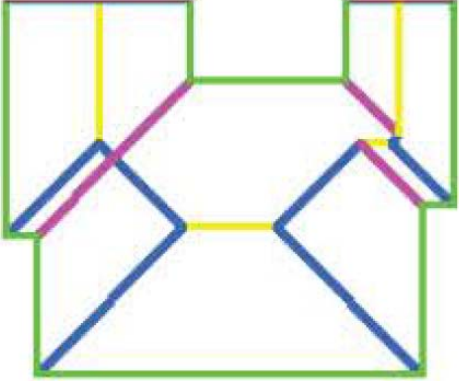
retrieved from a database, but the particular sequence retrieved did not improve the utility or alter the performance of the underlying method. *Ex Parte Nehls*, 88 USPQ2d 1883, 1887–90 (BPAI 2008).

By contrast, for the '770 patent, there is a strong functional, novel relationship between the system that generates the report and the specific contents of the report. Without the roof metrics provided in the claimed roof reports, users of the claimed methods could not estimate the cost of repairs to a roof. This is similar to *Application of Miller*, in which volumetric measurements printed on a measuring cup allowed the functionality of the cup itself to be fully realized. *Application of Miller*, 418 F.2d 1392, 1394 (C.C.P.A. 1969). Similarly, in *In re Gulack*, digits generated by an algorithm and impressed on a band for educational purposes were given patentable weight because they improved the functionality of the underlying band. *In re Gulack*, 703 F.2d at 1385. Here, the point of the underlying method is to produce roof estimation information. There is a strong functional relationship between that method and the contents of the roof report because those contents—*i.e.*, slope, area, and lengths of edges of the roof—are the product of the method, thus improving it by allowing for it to be useful for purposes of roof estimation. Because the roof report and underlying method are not independent, the roof report contents should be given patentable weight. *See*

MPEP § 2111.05 (“[W]here the claim as a whole is directed [to] conveying a message or meaning to a human reader ***independent of the intended computer system***, and/or the computer-readable medium merely serves as a support for information or data, no functional relationship exists.”).

b) AppliCad does not disclose or suggest this limitation:

Petitioner relies solely on AppliCad for this limitation, but AppliCad does not disclose the claimed report. See Paper 7 at 18–19, 26. Petitioner points to only one report illustrated in AppliCad, which is reproduced below, for allegedly meeting this claim limitation, but it is missing multiple required elements:

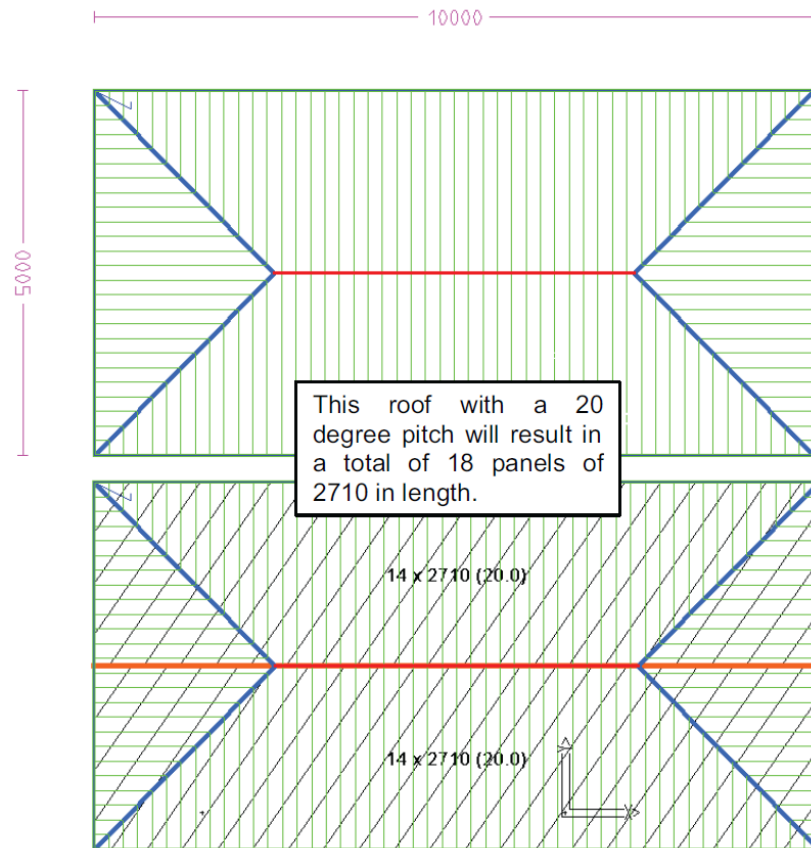
Applicad Roofing 123 Church St Hawthorn 03 9810 3100 03 9810 3200 Note 2 ACN: 1000 1		Date: November 2002 Job No
Customer	Address	Site address
Phone		Builder name
Mobile		Phone
Fax		
		Roof Pitch 20.0 Height 5.300 Rafter CTS 600 Eaves 0 Gable Finish For the supply and installation of Roof K5 1000 L.P. Steel, Galvanised - Paint Bidge BWP Ridge capping, Mountain Blue Fascia Metal Fascia, Torres Blue Gutter O Gee Gutter, Ebony Valley Not Included Barge Rake Flashing, Offwhite Batten Not Included Insulation Not Included Downpipes Not Included Curved Roof Not Included

Ex. 1004 at 40 (hereinafter “AppliCad Report Figure”). First, there are no “numerical values for corresponding slope, area, or lengths of edges of at least some of a plurality of planar roof sections.” Indeed, there is no indication of “area” or “lengths of the edges” at all in this report, or any information from which “area” or “lengths of the edges” could be derived. While “Roof Pitch 20.0” appears in a separate section of the report on the right side (highlighted in yellow above), there is nothing to suggest that this pitch “correspond[s]” to any of the “plurality of planar roof sections,” and in any event, given its location in a separate

section, the requirement that the “one or more top plan views” be “annotated” with slope information is not met either. *See* Ex. 1001 at claim 1.

In recognition of the fact that the reports disclosed in AppliCad do not meet the claim limitation here, Petitioner resorts to relying on two other figures in AppliCad that it contends depict “a top plan view of a roof annotated.” *See* Paper 5 at 19–21 (citing Ex. 1004 at 28, 25). Those figures, however, do not disclose the claimed roof estimate reports. First, there is no suggestion in AppliCad that these figures be included in any of the reports described therein. In fact, both figures include captions in boxes over the diagrams, confirming that these figures are intended to illustrate general roofing principles, and expressly indicated to **not** be included in AppliCad's alleged roof estimate report. *See id.* That alone renders these figures insufficient to satisfy the “roof estimate report” requirement.

Moreover, even if they were incorporated into a report, the two figures are missing numerous additional requirements set forth in the claims. The first of these additional, non-roof report figures Petitioner relies on is described in AppliCad as illustrating functionality for “[b]locking the roof to minimize wastage,” but this figure is missing the required “numerical values for corresponding . . . area[] or lengths of the edges of at least some of the plurality of planar roof sections” (Ex. 1001 at claim 1):



Ex. 1004 at 28 (hereinafter “Roof Blocking Figure”). Although Petitioner relies on the numbers “10000” and “5000” appearing to the top and left sides of the upper rectangle in the Roof Blocking Figure, there is no disclosure in AppliCad that those numbers refer to length. See, e.g., Ex. 1004 at 28–29 (describing the Roof Blocking Figure in terms of the number of roof panels used). And even if those two numbers did refer to length, at best those values reflect the length of one edge on *two separate planar roof sections*: one edge of the top and one edge of the side

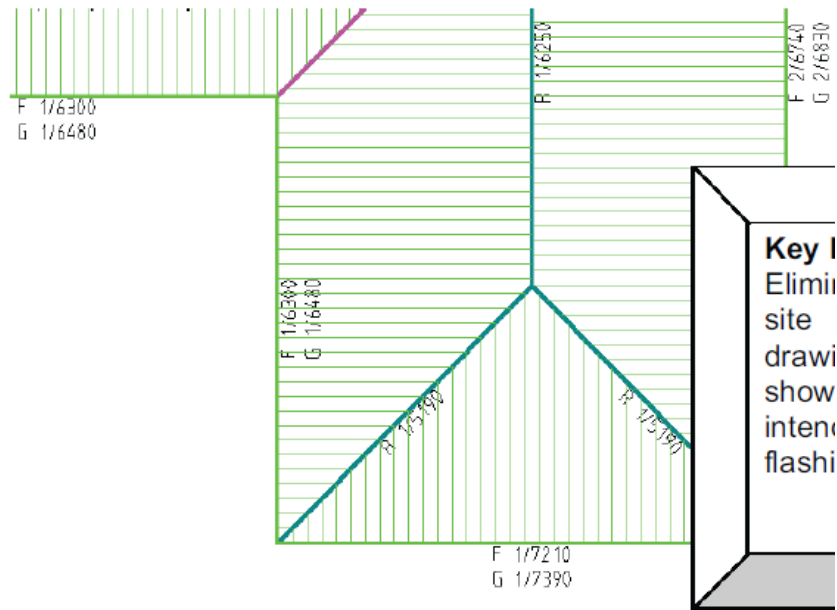
planar roof sections, respectively.³ *See id.* By contrast, claim 1 requires numerical values for more than just one edge of any given planar roof section. *See* Ex. 1001 at claim 1 (requiring “numerical values for corresponding slope, area, or lengths of the ***edges*** of at least ***some of the plurality of planar roof sections***”). AppliCad's Roof Blocking Figure does not meet this requirement, by only providing the length of ***a single edge*** of certain panels.

Further, there is no indication of “area” of the roof panels in the Roof Blocking Figure, or any information sufficient to derive area. The 5000 and 10000 numbers would at best provide a total roof area, but not the areas of the planar roof sections themselves as required. Moreover, AppliCad does not use this figure in any roof reports, and thus teaches away from using it in connection with the claimed invention. *See Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999).

The second of the non-roof report figures Petitioner relies on similarly illustrates measurements of roofing materials and likewise does not disclose

³ For example, 5000 corresponds to at best the length of the left-most triangular roof section. 10000 corresponds to at best the length of the trapezoidal roof section at the top of the figure.

“numerical values for corresponding slope, area, or lengths of the edges of at least some of the plurality of planar roof sections”:



Ex. 1004 at 25 (hereinafter “Flashings Figure”). The roofing materials here are flashings and fall into one of several categories, including ridge caps (designated by an “R”), gutters (designated by a “G”), and fascia (designated by an “F”). See *id.* at 26. The number and length of these flashings are indicated next to the letter designations, *e.g.*, “R 1/5190” is indicative of a single ridge cap with a length of 5190.

The flashing information here is different from measurements of the actual roof and thus is not any of the “slope, area, or lengths of the edges” of any “planar roof sections.” As an initial matter, the numbers and letters appearing on the

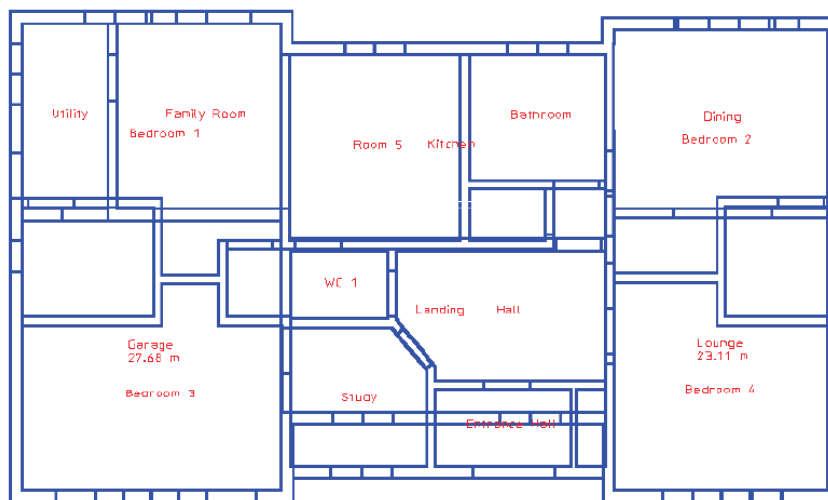
Flashings Figure have nothing to do with slope or area. They also are not “lengths of the edges” of any “planar roof sections.” To the contrary, those values reflect user-specified “Allowances” for the flashings based on availability of flashing material in inventory. See Ex. 1004 at 24 (“[T]he first thing we need to do is set the Allowances.”); *id.* (“lengths available in . . . inventory.”). Although these flashing lengths are placed on top of or next to the roof figure, they do not describe the lengths of the planar roof sections. See *id.* at 25 (“On the screen, the lengths and sizes *of the flashings* needed will be displayed . . .”). Moreover, as with the Roof Blocking Figure, AppliCad does not use this figure in any roof reports, and thus teaches away from using it in connection with the claimed invention. See *Tec Air v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360.

c) A POSITA Would Not Combine Avrahami and AppliCad:

Finally, a person of ordinary skill in the art would not be motivated to combine Avrahami and AppliCad in a way that results in the claimed invention. Petitioner primarily argues that a person of ordinary skill would combine these references because a three-dimensional model from Avrahami could be “import[ed] . . . into the roof reporting system of Applicad.” Paper 5 at 23, 31–32, 53. But Avrahami and AppliCad are fundamentally incompatible because AppliCad cannot import three-dimensional models from other programs. As such,

Petitioner has not articulated a reasonable rationale for combining the references in such a way that would achieve any of the claimed inventions with “a reasonable expectation of success.” *Purdue Pharma L.P. v. Depomed, Inc.*, 643 F. App’x 960, 965 (Fed. Cir. 2016) (“[A] patent . . . is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art . . . a patent challenger must demonstrate that a skilled artisan **would have had reason to combine the teachings** of the prior art references to achieve the claimed invention, **and** that the skilled artisan would have had **a reasonable expectation of success** from doing so.”).

Instead, AppliCad only provides for the importation of two-dimensional roof or building outlines. Ex. 1004 at 4 (Section “3. Importing Roof or Building outlines from another CAD system”). As the AppliCad reference states, “[t]he plan below is an imported CAD drawing”:



Ex. 1004 at 4.

A person of ordinary skill would not understand from the AppliCad reference that three-dimensional models can be imported. Ex. 2008 ¶ 61. Though AppliCad makes reference to importing a “.dxf format” file, this does not tell a person of ordinary skill that software can handle three-dimensional models. *Id.* To the contrary, after the two-dimensional outline is imported, the AppliCad reference teaches the user that certain parameters must be entered manually, precisely because the imported outline is only two-dimensional. Ex. 1004 at 4 (“By using the command *Digitise Outline*. . . we can then move the cursor to the extremities of the wall outline, by ‘snapping’ to those points, and ***after entering the pitch or slope of the roof*** and the eave offset from the wall, the roof is generated . . .”). If AppliCad was capable of importing three-dimensional models, then it would be unnecessary for the user to enter this information. Thus, AppliCad relies on the ***user*** to create a three-dimensional model via the commands available in the software.

The alternative methods of importing information described by AppliCad also confirm that only two-dimensional models can be imported. Ex. 2008 ¶ 61. For example, roof or building outlines may be scanned from an image or bitmap file. Ex. 1004 at 5 (“4. Importing Roof of Building outlines from a scanned image

or bitmap”). Like with the imported .dxf files above, the user is required to “digitize around the outline,” but additionally must enter “the true measurement from one reference line” before a three-dimensional model can be generated. Ex. 1004 at 6. Similarly, the “Track-Outline” command requires the user to “enter[] the pitch (or slope), the eave offset and the eave height” (Ex. 1004 at 7–8) before the user can “view the roof in 3 dimensions.” Ex. 1004 at 9. Thus, Petitioner has not even identified evidence that Avrahami and AppliCad are compatible, much less explained why one of ordinary skill in the art would know to combine Avrahami and AppliCad. *Purdue Pharma L.P. v. Depomed, Inc.*, 643 F. App’x 960, 963.

Petitioner’s argument is at best impermissible hindsight, including because there is no suggestion from within the Avrahami or AppliCad references that a person of ordinary skill would have combined them. This is not surprising because Avrahami and AppliCad are directed to different problems: Avrahami discloses an algorithm for extracting roof plane polygons from a pair of **aerial images** of an roof of **unknown** measurements, whereas AppliCad discusses generating a roof model using CAD software starting with an existing floor plan and at least some **known** measurements. Ex. 2008 ¶ 60; Ex. 1004 (“Providing you enter the dimensions for the perimeter of the roof accurately, and given the correct angle or

slope, then the roof generated on the screen should resemble the roof in question.”). Neither suggests generating a roof report after a three-dimensional model is created based on a pair of aerial images and then modified to ensure accuracy. Whereas creating a roof report in AppliCad after the user has designed a roof for a specific floor plan may be logical, doing so after creating a model from a pair of aerial images as in Avrahami is not obvious because the results may not be accurate. Ex. 2008 ¶ 62. Petitioner cannot simply recreate that aspect of the invention when neither reference includes any suggestion that such an inventive combination would be advisable. *InTouch Techs., Inc. v. VGO Comms., Inc.*, 751 F.3d 1327, 1351 (Fed. Cir. 2014) (rejecting expert’s testimony that relied on the challenged “patent itself as her roadmap for putting what she referred to as pieces of a ‘jigsaw puzzle’ together.”)

Indeed, Avrahami does not suggest using a roof estimate report, let alone the specific reports set forth in the claims. And the portions of AppliCad cited by Petitioner concern the importation of two-dimensional outlines (Paper 5 at 31–32), not the use of different images to create a three-dimensional model of a roof that is then used to generate the claimed roof estimate report, as discussed above. Thus, using the alleged combination of Avrahami and AppliCad to arrive at the claimed invention constitutes impermissible hindsight, and cannot support Petitioner’s

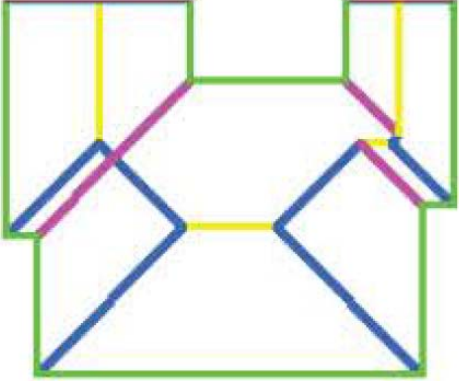
claim of obviousness. *See Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1354 (Fed. Cir. 2013); *Ecolochem, Inc. v. S. Cal. Edison Co.*, 227 F.3d 1361, 1371 (Fed. Cir. 2000); *Abbott Labs. v. Syntron Bioresearch, Inc.*, 334 F.3d 1343, 1357 (Fed. Cir. 2003); *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351 (Fed. Cir. 2001) (“To prevent hindsight invalidation of patent claims, ***the law requires some teaching, suggestion, or reason*** to combine cited references.”)

- (iv) Neither Avrahami Nor AppliCad Discloses “performing, by the roof estimation system, roof pitch determination of the roof structure based on the at least one location over the roof structure in the displayed aerial imagery to which the user moved the least one first visual marker” (claim 11) and “determining, by the roof estimation system, roof measurement information of one or more roof sections of the roof structure based on the at least one location over the roof structure in the displayed aerial imagery to which the user moved the least one first visual marker” (claim 14)

The combination of Avrahami and AppliCad does not arrive at the inventions claimed here because neither of those references disclose or suggest “roof pitch determination” (claim 11) or “determining . . . roof measurement information of one or more roof sections” (claim 14) where such functionality is “***based on the at least one location over the roof structure in the displayed aerial imagery to which the user moved the least one first visual marker***” as required by the claims.

As detailed in Section V.B.(i) *supra*, Petitioner relies on the seed points of Avrahami as the “first visual marker,” but the pointing to and identifying of seed points in Avrahami does not constitute movement of the first visual marker. For this reason alone, Avrahami fails—there is no “location over the roof structure in the displayed aerial imagery ***to which the user moved the at least one first visual marker***” on which to base any measurement. But Avrahami is even further removed from the claimed inventions here. Avrahami is focused entirely on 3D model generation from aerial images, and has nothing to do with “roof pitch determination” or “determining . . . roof measurement information of one or more roof sections.” Indeed, Avrahami does not once refer to “pitch” or “slope.” See Ex. 1003; Ex. 2008 ¶ 66.

AppliCad fails to supply any of the elements missing from Avrahami. AppliCad does not disclose a “first visual marker” and therefore AppliCad does not and cannot disclose a “location over the roof structure in the displayed aerial imagery ***to which the user moved the at least one first visual marker.***” Petitioner does not dispute this, and relies solely on Avrahami to meet these aspects of the claims. See Paper 7 at 13-14. Petitioner points to the appearance of “Roof Pitch 20.0” in the AppliCad Report Figure reproduced below:

Applicad Roofing 123 Church St Hawthorn 03 9810 3100 03 9810 3200 Note 2 ACN: 1000 1		Date: November 2002 Job No										
Customer Phone Mobile Fax	Address	Site address Builder name Phone										
		<table border="0"> <tr> <td>Roof Pitch</td> <td>20.0</td> </tr> <tr> <td>Height</td> <td>5.300</td> </tr> <tr> <td>Rafter CTS</td> <td>600</td> </tr> <tr> <td>Eaves</td> <td>0</td> </tr> <tr> <td>Gable Finish</td> <td></td> </tr> </table> For the supply and installation of Roof K5 1000 LP-Steel, Galvanised - Pattern Ridge BWP Ridge capping, Mountain Blue Fascia Metal Fascia, Torres Blue Gutter O Gee Gutter, Ebony Valley Not Included Barge Rake Flashing, Offwhite Batten Not Included Insulation Not Included Downpipes Not Included Curved Roof Not Included	Roof Pitch	20.0	Height	5.300	Rafter CTS	600	Eaves	0	Gable Finish	
Roof Pitch	20.0											
Height	5.300											
Rafter CTS	600											
Eaves	0											
Gable Finish												

Ex. 1004 at 40. But in the figure above, there are multiple roof panels and only one reference to pitch, such that the listed pitch does not corresponds to “one location over the roof structure” as required. More fundamentally, AppliCad contains no disclosure that this value is “based on the at least one location . . . to which the user moved the least one first visual marker.” Instead, AppliCad’s methodology for determining roof pitch is unquestionably not “based on . . . one location over the roof structure in the displayed aerial imagery to which the user moved the least one first visual marker.” In AppliCad, pitch is not determined

based on aerial images at all. Rather, a user enters the values for roof pitch or slope manually. Ex. 1004 at 3 (“***Providing you enter the dimensions*** for the perimeter of the roof accurately, and ***give the correct angle or slope***, then the roof generated on the screen should resemble the roof in question.”), 4 (“***. . . after entering the pitch or slope of the roof*** and the eave offset from the wall, the roof is generated automatically . . .”); Ex. 2008 ¶ 67. This does not meet the claimed limitation.

Accordingly, the combination of Avrahami and AppliCad fails to result in the claimed invention.

C. Ground 3: The Combination of Avrahami, AppliCad, and Abhyanker Do Not Render Claims 10 and 19 Obvious

(i) A Person Of Ordinary Skill Would Not Combine Avrahami and Abhyanker

A person of ordinary skill in the art would not be motivated to combine Avrahami and Abhyanker in a way that results in the claimed invention. Petitioner argues that Avrahami would be combined with the “address look-up” functionality of Abhyanker “so that aerial images obtained by these systems could easily be located by the user using a simple, easy-to-query interface.” Paper 7 at 29. But such conclusory analysis offers nothing but impermissible hindsight. *Abbott Labs.v. Syntron Bioresearch, Inc.*, 334 F.3d 1343, 1357 (“To prevent hindsight

invalidation of patent claims, *the law requires some teaching, suggestion, or reason* to combine cited references.”).

A person of ordinary skill in the art would not think to combine the teachings of Avrahami with Abhyanker to achieve the claimed inventions of the '770 patent because they are directed to disparate problems and technologies. Ex. 2008 ¶ 71. Avrahami is not aimed at providing completed software for users to generate three-dimensional models of roofs, nor does it disclose or pertain to obtaining aerial images for analysis. *Id.* Rather, it is directed to a study “[t]o examine the algorithm efficiency” for “semi-automatic 3D spatial polygon extraction form a pair of colored images.” See Ex. 1003 at 43 (Abstract). Equally different to the addressing problems solved by the '770 patent, Abhyanker is directed to solving the problem of the accuracy of marker placement in mapping software. See Ex. 1006 (Abhyanker) as Abstract; Ex. 2008 ¶ 71. Petitioner provides no reason why a person of ordinary skill in the art would think to draw from two such disparate references to create the patented inventions of the '770 patent. *InTouch Techs.*, 751 F.3d at 1351 (“A reason for combining disparate prior art references is a critical component of an obviousness analysis; ‘this analysis should be made explicit.’”) (quoting *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)).

The Petitioner's failure to provide a motivation to combine with respect to these references is particularly important here because there is no suggestion in Avrahami that locating images of buildings is a problem that should be solved. Ex. 2008 ¶ 72; *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999) ("Combining prior art references without evidence of . . . suggestion, teaching, or motivation to combine simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight."). Indeed, as described above, Avrahami focuses on testing the efficacy of an algorithm, not addressing how to obtain inputs for the algorithm. Ex. 2008 ¶ 71. Furthermore, Petitioner has made no showing that the teachings of Abhyanker include obtaining a pair of aerial images of the same building that are suitable for aerial roof estimation, as required by the claims 10 and 19. Ex. 2008 ¶ 72; '770 patent, claims 1 (requiring "a first aerial image of a roof structure" and "the second aerial image providing a different view of the roof than the first aerial image") and 19 (similar).

(ii) The Combination Does Render Obvious The Elements of Claim 1 From Which Claim 10 Depends

Claim 10 depends on claim 1. The combination of Avrahami and AppliCad does not render obvious claim 1 from which claim 10 depends and Petitioner does not rely on Abhyanker for any elements of claim 1. Accordingly, the combination

of Avrahami, AppliCad, and Abhyanker cannot render obvious claim 10. *See In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988).

(iii) The Combination Does Not Disclose “receive an indication of a selection . . . as a result of detection of movement of at least one visual marker in a graphical user interface” (claim 19)

Petitioner relies solely on Avrahami for this limitation and not any other reference. This limitation requires that movement of the marker be detected, thus requiring that the marker be movable. Accordingly, for the same reasons as discussed above with respect to claim 1 in Section V.B.(i), *supra*, this combination fails to render obvious claim 19.

(iv) The Combination Does Not Disclose “display the location of a second visual marker corresponding to the first visual marker on the roof structure of the building in the second aerial image of the roof structure based on the indication received of the location on the displayed first aerial image to which the user had moved the first visual marker” (claim 19)

Petitioner relies solely on Avrahami for this limitation and not any other reference. For the same reasons as discussed above with respect to claim 1 in Section V.B.(ii), *supra*, this combination fails to render obvious claim 19.

- (v) **The Combination Does Not Disclose “generate and output a roof estimate report using a report generation engine, wherein the roof estimate report includes one or more top plan views of a model of the roof annotated with numerical values for corresponding slope, area, or lengths of the edges of at least some of the plurality of planar roof sections of the model of the roof” (claim 19)**

Petitioner relies on both Avrahami and AppliCad for this limitation. For the same reasons as discussed above with respect to claim 1 in Section V.B.(iii), *supra*, this combination fails to render obvious claim 19.

VI. OBJECTIVE EVIDENCE ESTABLISHES NON-OBVIOUSNESS OF INVENTION

Obviousness is a question of law which requires four underlying factual findings: (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the art; and (4) objective indicia of non-obviousness. *See Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966). The first three factors have been discussed above. The fourth, objective indicia of non-obviousness, is now discussed.

Even where the prior art appears to render an invention obvious, objective indicia of non-obviousness including evidence that inventive aspects of the claimed invention are commercially successful and praised by the industry, can establish that the invention is non-obvious. *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012);

see, e.g., *Ecolochem, Inc. v. S. Cal. Edison Co.*, 227 F.3d 1361, 1376–1380. It is improper to defer consideration of these objective indicia until after the Board has already made a finding of obviousness, and indeed, when evidence of such indicia are present, it *must* be considered prior to the obviousness determination. *Nike Inc. v. Adidas AG*, 812 F.3d 1326, 1339–40 (Fed. Cir. 2016) (remanding to the Board to consider objective indicia of non-obviousness); *Intri-Plex Techs. Inc. v. Saint-Gobain Performance Plastics Rencol Ltd.*, IPR2014-00309, Paper 83 at 35–36 (PTAB, Mar. 23, 2014) (“Evidence of secondary considerations of non-obviousness, when present, must always be considered en route to a determination of obviousness.” (Quotation omitted.)). Evidence relating to the objective indicia of non-obviousness may be the most probative evidence in the record. *Id.* (“Evidence of secondary considerations ‘may often be the most probative and cogent evidence of non-obviousness in the record’”) (quoting *Leo Pharm. Prods., v. Rea*, 726 F.3d 1346, 1358 (Fed. Cir. 2013)).

As Petitioner is aware from the ongoing district court proceedings and Patent Owner's discovery responses in those proceedings, several important objective indicia of non-obviousness apply to the '770 patent claims, including commercial success, long-felt but unsolved needs, industry praise and unexpected results, industry skepticism, and copying. Due to the limited nature of these IPR

proceedings, Patent Owner elaborates on only two here: the commercial success of Patent Owner's Twister and Render House products and the evidence of praise for Patent Owner's invention described in the '770 patent.

While Patent Owner must show sufficient nexus that the indicia of non-obviousness are tied to the novel elements of the claim at issue, the "[o]bjective indicia 'need only be reasonably commensurate with the scope of the claims.'" *Institut Pasteur & Universite Pierre Et Marie Curie v. Focarino*, 738 F. 3d 1337, 1347 (Fed. Cir. 2013) (quoting *Rambus Inc. v. Rea*, 731 F.3d 1248, 1257 (Fed. Cir. 2013)). Patent Owner is not required to "produce objective evidence of nonobviousness for every potential embodiment of the claim." *Rambus Inc. v. Rea*, 731 F.3d 1248, 1257. A prima facie nexus is established when the patent owner shows significant sales in a relevant market and that the product sold is the invention claimed in the patent. *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995); *J.T. Eaton & Co. v. Atlantic Paste & Glue Co.*, 106 F.3d 1571 (Fed. Cir. 1997) ("When a patentee can demonstrate commercial success, usually shown by significant sales in a relevant market, and that the successful product is the invention disclosed and claimed in the patent, it is presumed that the commercial success is due to the patented invention."). As shown below, Patent Owner's Render House and Twister software are the invention disclosed and claimed in the

'770 Patent, and has achieved commercial success and praise in the roof estimation market.

A. Patent Owner's Render House and Twister Products Embody The Claimed Invention Of The '770 Patent

Patent Owner's Render House and Twister products practice at least claims 1, 10, 11, 14, and 19 of '770 patent.

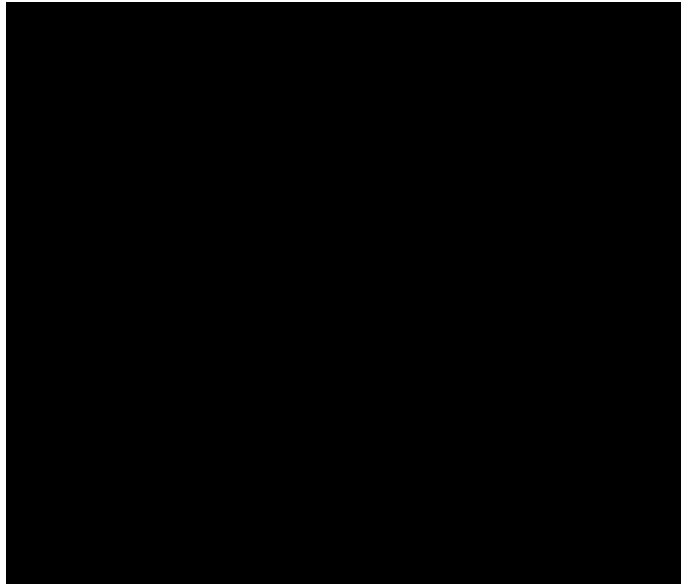
(i) Render House And Twister Embody Claim 1 Of The '770 Patent

Render House and Twister embody the computer-implemented process for generating roof estimate reports as disclosed and claimed in independent claim 1 of the '770 patent. Ex. 2006 (Render House user guide) at 4 [REDACTED]

[REDACTED]; Ex. 2004 (Twister user guide) at 4 [REDACTED]

[REDACTED]; Ex. 1001 at claim 1.

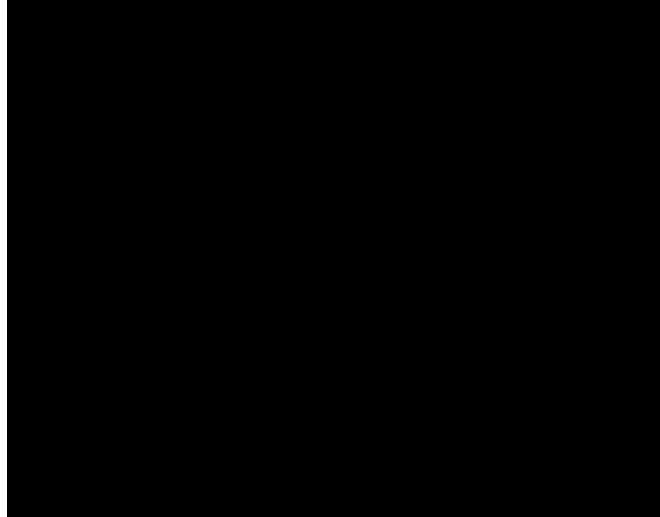
Render House and Twister each display a graphical user interface that includes a first aerial image of a roof structure and a moveable visual marker:



Ex. 2007 (Bajaj Decl.) ¶ 80 at claim 1.b (red arrow



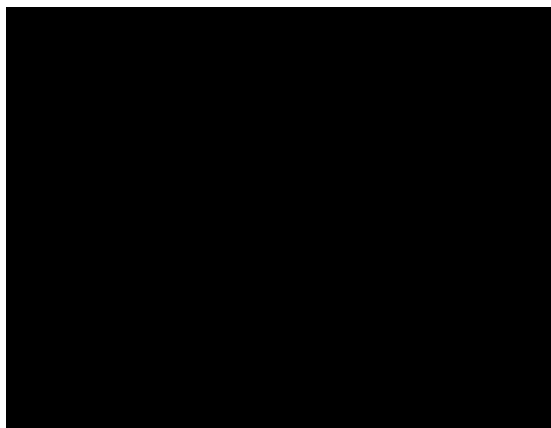
 in Render House).



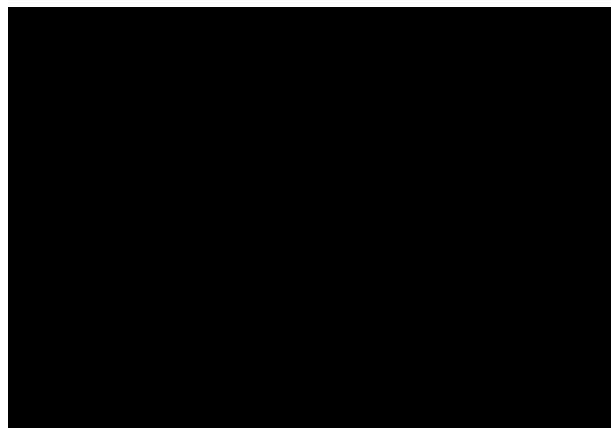
Id. (same with respect to Twister software). Both Render House and Twister allow moving the visual marker to a new location in response to input from the user. For example, the Render House software allows moving the visual marker to a different location in response to user input. *Compare id.* at claim 1.b with *id.* at 1.c

(showing [REDACTED]
[REDACTED]):

Excerpts From Render House Product



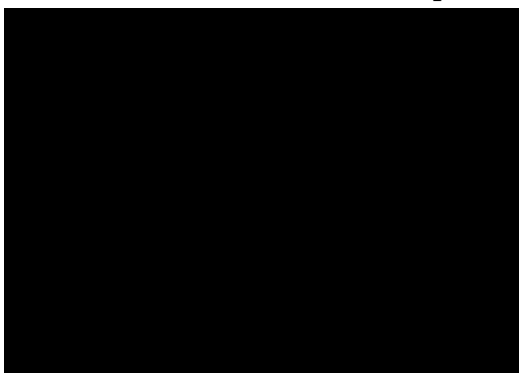
Aerial Image with Visual Marker



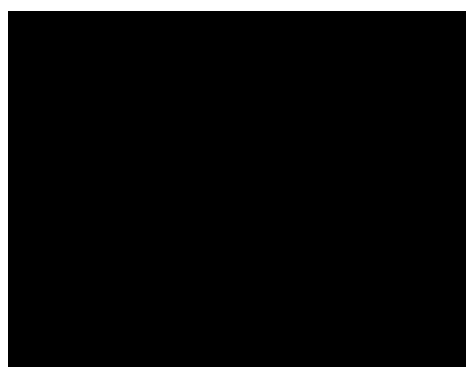
Visual Marker Moved to First Location

Twister similarly allows moving the visual marker to a different location in response to user input. *Compare id.* at claim 1.b with *id.* at 1.c (showing [REDACTED]
[REDACTED]):

Excerpts From Twister Product



Aerial Image with Visual Marker



Visual Marker Moved to First Location

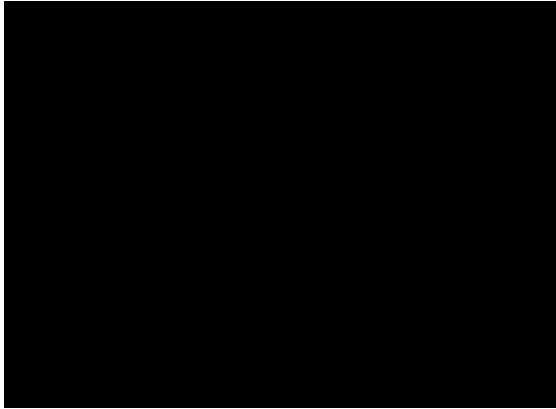
The Render House and Twister software store the locations of each point inputted using the moveable visual marker. *Id.* at claim 1.d [REDACTED]

[REDACTED]
[REDACTED]); *id.* [REDACTED]
[REDACTED]
[REDACTED]).

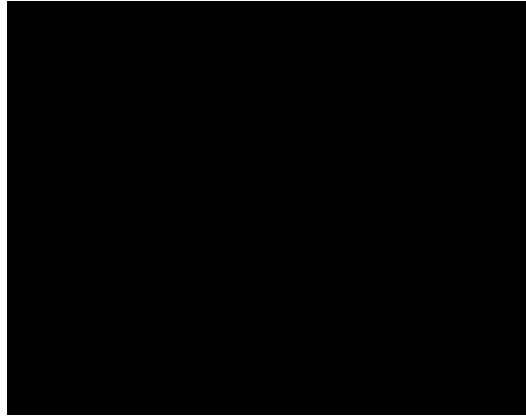
As shown below, Render House and Twister also display a second aerial image of the roof that provides a “different view of the roof than the first aerial image.” *Id.* at claim 1.e. Render and Twister also display a second visual marker on the second aerial image based on an indication received from the stored data in memory of the first location on the first image to which the user had moved the first visual marker: *Compare id.* at claim 1.d with *id.* claim 1.f (displaying [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]):

Excerpts From Render House Product

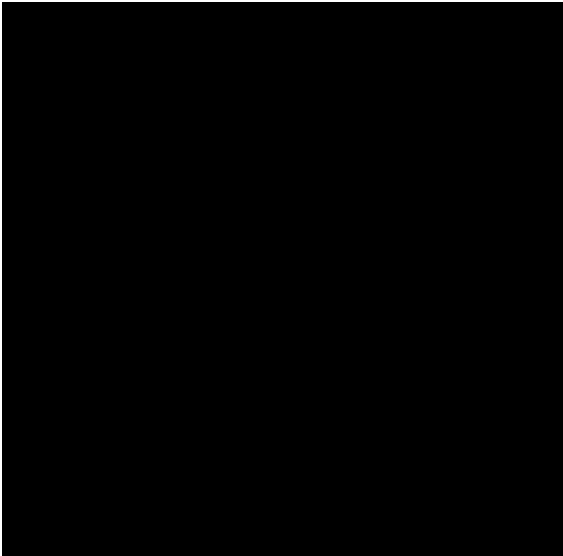


First Aerial Image

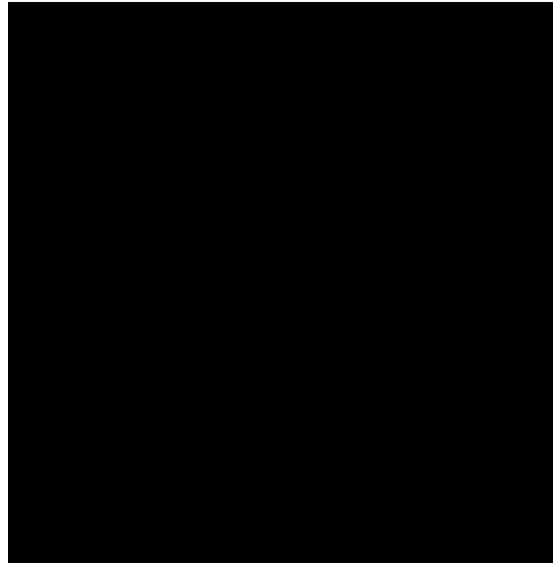


Second Aerial Image With Second
Visual Marker

Excerpts From Twister Product



First Aerial Image



Second Aerial Image With Second
Visual Marker

Render House and Twister can also generate and output a roof estimate report using a report generation engine. *See id.* at claim 1.g [REDACTED]

[REDACTED]

[REDACTED]

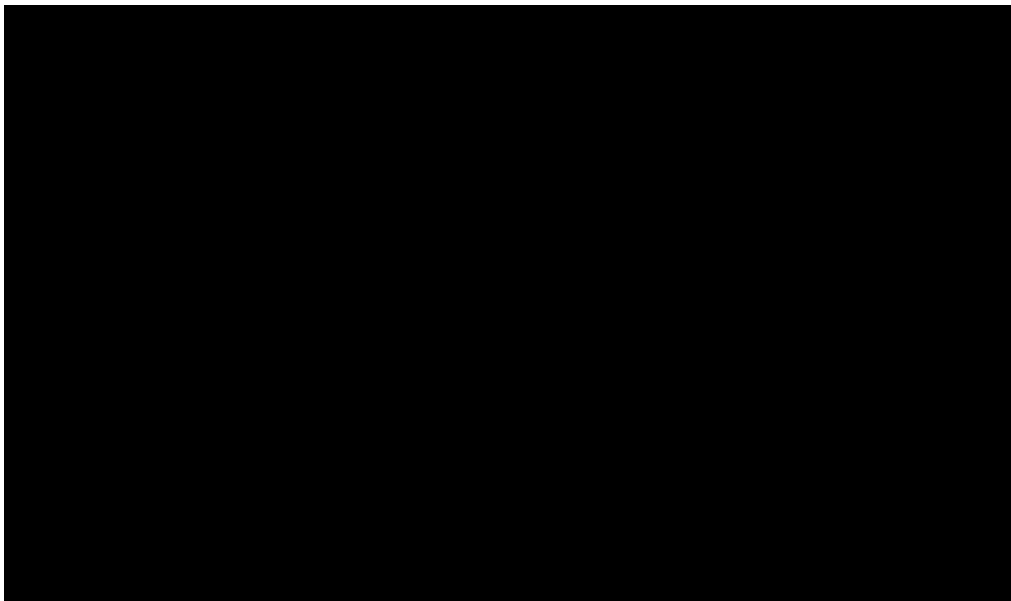
[REDACTED]). The generated roof estimate reports include one or more top plan views of the model of the roof annotated with numerical values for corresponding slope, area, or lengths of the edges of at least some of the plurality of planar roof sections of the model of the roof:



Id.; see also Ex. 2006 at 4; Ex. 2004 at 4.

(ii) Render House And Twister Embody Claim 10 Of The '770 Patent

Render House and Twister also allow a user to input a location corresponding to the location of a building using the [REDACTED] as claimed in dependent claim 10 of the '770 patent. Ex. 2007 ¶ 80 at claim 10.a [REDACTED], which allows 'a user to input location data corresponding to a location of a building"). In response to the user input, Render House and Twister provide access to aerial imagery of the roof of the building corresponding to the input location. *Id.* at claim 10.b:



As shown in the screenshot above, the location data can be a street address or global positioning coordinates.

(iii) Render House And Twister Embody Claim 11 Of The '770 Patent

Render House and Twister also perform pitch determination of the roof based on at least one location over the roof structure to which the user moved the visual marker as claimed in dependent claim 11 of the '770 patent. Render House and Twister each perform a pitch determination based on the location of the moved visual marker. For example, the Render House software performs a pitch determination for the roof plane corresponding to the location of the moved marker. *Id.* at claim 11 [REDACTED] [REDACTED]; *see also* Ex. 2006 at 23 (Render House allowing [REDACTED]). The Twister software performs the same pitch determination. *Id.* [REDACTED] [REDACTED] [REDACTED]).

(iv) Render House And Twister Embody Claim 14 Of The '770 Patent

Render House and Twister also determine roof measurement information of one or more roof sections of the roof structure based on at least one location to which the user moved the visual marker as claimed in dependent claim 14 of the '770 patent. Render House and Twister also determine roof measurement

information, including slope, area, and lengths of edges, based on the location to which the visual marker was moved. The Render House software, for example, determines the slope based on the location to which the visual marker was moved.

Id. at claim 14 [REDACTED]
[REDACTED]; *cf.* Ex. 2006 at 15 (Render House calculating slope). The Twister software, for example, also determines the slope/pitch and lengths of edges based on the location to which the visual marker was moved. *Id.* [REDACTED]
[REDACTED]).

(v) Render House And Twister Embody Claim 19 Of The '770 Patent

Render House and Twister are software that embody the computer executable instructions as disclosed and claimed in independent claim 19 of the '770 patent. Ex. 2006 at 4; Ex. 2004 at 4; Ex. 1001 at claim 19.

As described above with respect to claim 10, Render House and Twister enable a user to input a location corresponding to the location of a building using the [REDACTED] and provide access to aerial imagery of the roof of the building corresponding to the input location that include at least two images with different views of the roof. *See* Sections VI.A.(i)–(ii), *supra*.

Render House and Twister each receive an indication of a selection of a location on the roof structure indicated by detecting movement of a visual marker in the graphical user interface. For example, as explained with respect to claim 1, Render House and Twister allow the user to move a visual marker to a location on the roof structure in an aerial image while that aerial image is displayed. See Section VI.A.(i), *supra*; Ex. 2007 ¶ 80 at claim 19.d [REDACTED]

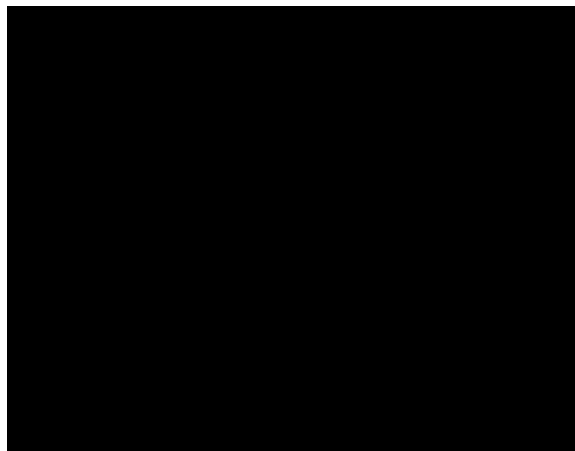
[REDACTED]

[REDACTED]; *id.* [REDACTED]

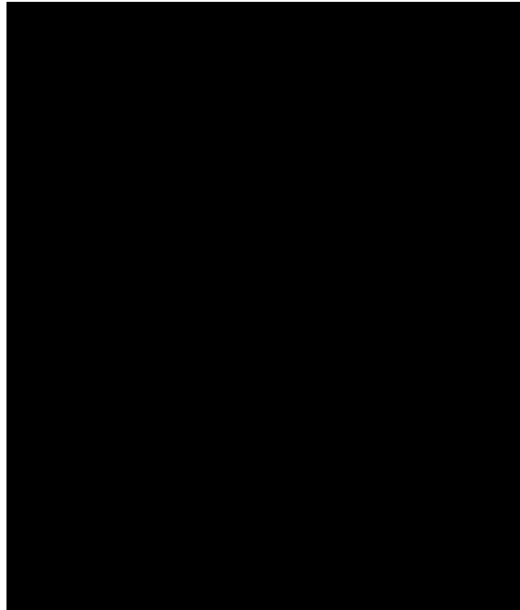
[REDACTED]

[REDACTED]). Render House and

Twister use the indication of the selection of the location on the roof structure to identify a location on the roof structure in the aerial image:



Id. at 19.e (screenshot from Render House identifying the edge of the roof structure).



Id. (screenshot from Twister identifying the corner of the roof structure).

As explained above with respect to claim 1, Render House and Twister also display the location of a second visual marker corresponding to the first visual marker on the roof of a second aerial image based on the location to which the user had moved the first visual marker. *See* Section VI.A.(i), *supra*. Render House and Twister can also generate and output a roof estimate report using a report generation engine. *See* Section VI.A.(i), *supra*.

B. The Render House And Twister Products Have Achieved Significant Commercial Success As A Result Of The Patented Features

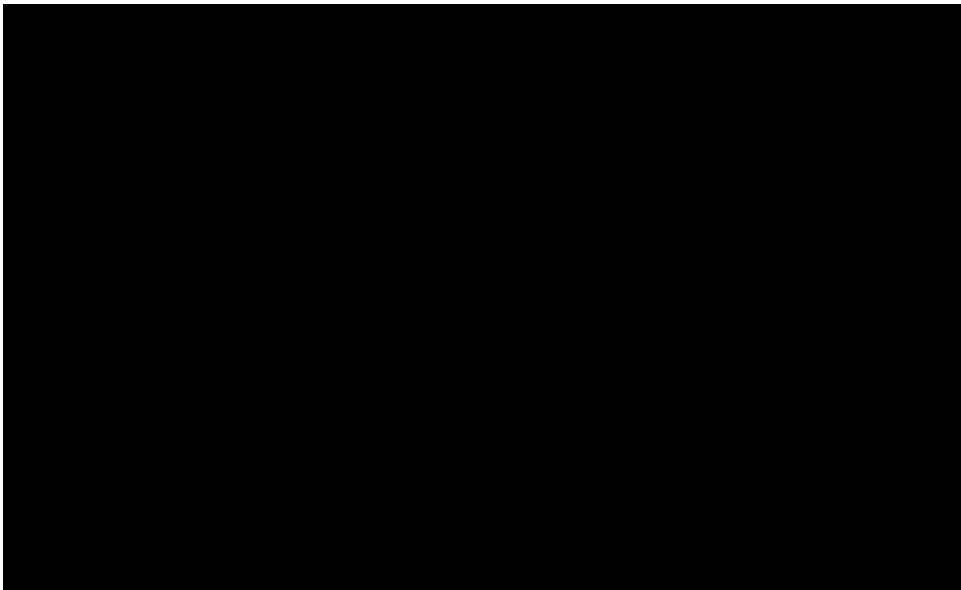
Patent Owner's roof report service used the patented invention to achieve tremendous commercial success by creating accurate roof estimate reports faster

and at less expense than previous solutions. Patent Owner pioneered a novel process whereby a user can generate roof estimate reports from complex three-dimensional models based on analysis of particular types of high-resolution aerial photographs and new photogrammetry techniques. The inventiveness of Patent Owner's process generates more consistently accurate roof measurements than could be achieved using older methods. *See, e.g.*, Ex. 2019 at 3 ("We also know the total bottom line number is more accurate so we stand behind that. We don't have to worry that we may have made a mistake on the measurement."); Ex. 2020. Patent Owner's process also saves time and money, and reduces liability and risk to contractors. *See* Ex. 2020 (showing a \$617,500 "cost savings" by using EagleView); Ex. 2019.

Patent Owner's success is directly tied to the patented invention. The Render House and Twister products embody the claimed invention of the '770 patent to create roof reports that are then transmitted to customers. *See supra* VI.A. Patent Owner first began producing roof reports using its patented invention in 2008. Recognizing the benefits of Patent Owner's technology, Petitioner Xactware entered a contract with Patent Owner for its roof reports soon after the release of Patent Owner's first product. Ex. 2021 (announcing "a new technology integration" between EagleView and Xactware). Over the next several years,

Patent Owner's services achieved rapid growth in sales due to its invention. *See, e.g.,* Ex. 2022 ("EagleView was ranked No. 13 in the software category and No. 133 overall in *Inc. Magazine's* recently released 31st annual Inc. 500. The ranking was determined by the company's three-year revenue growth of 2,406 percent.").

Patent Owner's sales information further demonstrates the commercial success of its invention:⁴



⁴ Revenue data comes from the gross revenue from roof reports found in Patent Owner's financial records. Exs. 2012 at 3; 2013 at 7; 2014 at 6; 2015 at 12. This revenue reflects sales of roof reports created using Patent Owner's Twister and Render House products. Ex. 2011 (Declaration of C. Johnson).

In 2009 Patent Owner Eagle View sold [REDACTED] roof reports using the patented invention for a total revenue of approximately [REDACTED]. *See* Ex. 2012 at 3. The number of roof reports [REDACTED] in 2015. *See* Ex. 2015 at 12 ([REDACTED]). Patent Owner's commercial success from the patented invention has resulted in an increase in revenue over the past seven years of [REDACTED]. *Compare* Ex. 2012 at 3 *with* Ex. 2015 at 12 (calculated growth in revenue from [REDACTED] in 2009 to approximately [REDACTED] in 2015).

Petitioner recognized the commercial success of Patent Owner's invention two years ago when it announced a plan to acquire Patent Owner. *See* Ex. 2023 at 4. Petitioner Verisk valued Patent Owner's business at \$650 million. *Id.* The CEO of Petitioner Verisk explained to its investors that this valuation was due to the value of the Patent Owner's patent portfolio: "Additionally, [Patent Owner] has significant intellectual property, including over 20 issued patents." *Id.* at 3.

Patent Owner's commercial success using its patented invention is strong evidence that Petitioner's obviousness arguments rely on impermissible hindsight analysis. *See e.g., Intri-Plex Tech.*, IPR2014-00309, Paper 83 at 38 ("[T]he commercial success . . . weighs heavily in favor of non-obviousness of the invention."). The core of Patent Owner's business is the novelty and

innovativeness of its technology embodying the patented invention. It would not have achieved commercial success or disrupted the roofing and insurance industry had its patented invention been obvious at the time as Petitioner now argues. The patentability of Claims 1, 10, 11, 14, and 19 should be upheld.

C. The Invention Has Been Recognized and Praised By the Roofing and Insurance Industry

Patent Owner created a fundamentally new way of measuring roofs and creating roof reports. Prior to Patent Owner's invention, "[r]oofers once had to spend hours with ladders and tape measures to figure out the size of a job." Ex. 2024 at 1. Patent Owner's invention created a new avenue for "determining roof measurement information based on one or more aerial images of a roof of a building." Ex. 1001 at 1:15–20. The roofing measurement industry has taken notice of Patent Owner's invention and uniformly praised its innovativeness.

While the industry was initially skeptical of Patent Owner's new process, it soon became an accepted industry standard. Ex. 2025 at 2 ("When [the inventor] began telling contractors and insurance claims adjusters about his technology, they were skeptical."); *id.* at 1 ("Having an Eagle View report has become an industry accepted standard" (quotation omitted)); Ex. 2026 ("EagleView invented the concept of 3D aerial roof measurements and has quickly become the industry standard in both the roofing and insurance industries."). Experts in the industry

now “consider Eagle View’s invention the ‘greatest technological breakthrough’ in the industry.” Ex. 2027 at 2; *see also id.* at 1 (“Eagle View made one the biggest breakthroughs in the history of the industry by creating a state-of-the-art software program that remotely snaps sophisticated aerial pictures of roofs and accurately measures lengths, pitches, valleys and other hard-to-see areas on roofs.”).

As explained above, a key feature of the patented invention is the increased accuracy of roof measurements by permitting a movable marker that is correspondingly moved in other image. *See, e.g.,* Ex. 1001 at claim 1; Ex. 2008 ¶ 23. Not surprisingly, the industry praises the accuracy of Patent Owner’s roof reports, which is a direct result of the innovative features. *See* Ex. 2028 (describing Patent Owner Eagle View’s reports as “consistent, accurate measurements every time”); *id.* (explaining that “similar services . . . just don’t compare to EagleView in terms of accuracy . . .”); Ex. 2025 at 2 (“The software also produced **more precise** estimates than workers with tape measurers.”) (emphasis added). Indeed, a survey of Patent Owner’s customers in 2009 found that [REDACTED] praised the [REDACTED] by giving them an [REDACTED] rating. *See* Ex. 2005.

Petitioner’s executives have also touted the benefits of Patent Owner’s technology to its investors by noting that “[a]erial imagery [was] emerging as a

disruptive innovation for insurance,” and stating that Patent Owner’s use of imagery for roof estimating was a “killer app.” Ex. 2029 at 12; Ex. 2023 at 16. Petitioner Verisk’s CEO acknowledge Patent Owner’s pioneering work in rooftop aerial measurement technology, describing Patent Owner’s “unique” ability to span two technologies: the “very complex” worlds of 3D imaging, on the one hand, and analytics based on aerial photographs, on the other. *Id.* at 14. He further specifically noted that one of the “special things” about Patent Owner was the “over 20 patents that [Patent Owner] has.” *Id.* at 17. Patent Owner’s uniform praise from the roofing industry, experts, and even Petitioner is strong evidence that Petitioner’s obviousness arguments are without merit.

VII. CONCLUSION

For the reasons discussed herein, Eagle View respectfully requests that the Board deny Petitioner’s Petition and upholds the patentability of the challenged claims.

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Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

This Patent Owner's Response complies with the type-volume limitations as mandated by 37 C.F.R. § 42.24, totaling 13,910 words. Counsel has relied upon the word count feature provided by Microsoft Word.

/Gianni Cutri
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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Patent Owner's Response was served on November 14, 2016, by filing this document through the Patent Review Processing System as well as via email directed to counsel of record for the Petitioner at the following:

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