Brent O. Hatch (5715)
Hatch Law Group, PC
22 E. 100 S. Suite 400
Salt Lake City, Utah 84111
Telephone: (801) 869-1919
hatch@hatchpc.com

Attorney for Defendant – Additional counsel listed in signature

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF UTAH

EAGLE VIEW TECHNOLOGIES, INC. and PICTOMETRY INTERNATIONAL CORP., *Plaintiffs*, v. NEARMAP US, INC., *Defendant*.	**DEFENDANT'S MOTION FOR CLAIM CONSTRUCTION** Case No.: 2:21-cv-00283(TS)(DAO) Judge: Ted Stewart Magistrate Judge: Daphne A. Oberg

TABLE OF CONTENTS

Page

I. INTRODUCTION 1

1. The Asserted Patents and Level of Ordinary Skill in the Art 2

2. Legal Standard for Claim Construction 2

II. DISCUSSION 4

1. "roof report" / "roof estimate report" in all asserted claims of the '960, '568, '961, '737, '152, and '149 Patents 4

2. "aerial image(s)" / "aerial image file(s)" in all asserted claims of the '960, '568, '961, '737, '152, and '149 Patents 7

3. "oblique image(s)" in all asserted claims of the '518 Patent and "wherein the primary and secondary oblique images match the perspectives from which the primary and secondary oblique images were captured" in all asserted claims of the '518 Patent 10

4. "calibrating / calibrate / calibrated . . . using calibration information" in all asserted claims of the '960, '568, and '961 Patents 12

5. "providing a visual marker that is moveable on a computer monitor around said region, said visual marker initially corresponding to said first location data, wherein said visual marker may be moved to a final location on top of the building to more precisely identify the location of the building roof structure, the final location having location coordinates" in all asserted claims of the '880 Patent 14

6. "three-dimensional model" / "3D model" in all asserted claims of the '960, '568, '152, and '149 Patents; claims 21, 24, and 25 of the '961 Patent; and claims 10, 17, and 25 of the '737 Patent 15

7. "primary oblique image including overlapping data" in all asserted claims of the '518 Patent 20

8. "the [first and second / plurality of] aerial images . . . taken independent[ly] of each other" in all asserted claims of the '568 Patent; and claims 1, 2, 7, 21, 22, 24, 25 of the '961 Patent 23

III. CONCLUSION 25

TABLE OF AUTHORITIES

Page(s)

Cases

Amazon.com, Inc. v. Barnesandnoble.com, Inc.,
239 F.3d 1343 (Fed. Cir. 2001) 16

Aylus Networks, Inc. v. Apple Inc.,
856 F.3d 1353 (Fed. Cir. 2017) 3

Bd. of Regents of the Univ. of Tex. Sys. v. BENQ Am. Corp.,
533 F.3d 1362 (Fed. Cir. 2008) 5

Eagle View Techs., Inc. and Pictometry Int'l Corp. v. Xactware Sols., Inc. and Verisk Analytics, Inc., Case No. 1:15-cv-7025-RBK-JS (D.N.J.) 7

Function Media, LLC v. Google, Inc.,
708 F.3d 1310 (Fed. Cir. 2013) 13

Liebel-Flarsheim Co. v. Medrad, Inc.,
481 F.3d 1371 (Fed. Cir. 2007) 2, 16

Microsoft Corp. v. Multi-Tech Sys., Inc.,
357 F.3d 1340 (Fed. Cir. 2004) 3

Nystrom v. TREX Co., Inc.,
424 F.3d 1136 (Fed. Cir. 2005) 14

O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., Ltd.,
521 F.3d 1351 (Fed. Cir. 2008) 1

Omega Eng'g, Inc. v. Raytek Corp.,
334 F.3d 1314 (Fed. Cir. 2003) 7

Phillips v. AWH Corp.,
415 F.3d 1303 (Fed. Cir. 2005) 1, 2, 3, 20

Playtex Prods., Inc. v. Procter & Gamble Co.,
400 F.3d 901 (Fed. Cir. 2005) 21

Realtime Data, LLC v. Stanley,
554 F. App'x 923 (Fed. Cir. 2014) 4, 24

EX2018 / IPR2022-00734 / Page 3 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

TABLE OF AUTHORITIES (CONT.)

Page(s)

Renishaw PLC v. Marposs Societa' per Azioni,
158 F.3d 1243 (Fed. Cir. 1998) 1

TALtech Ltd. v. Esquel Apparel, Inc.,
279 F. App'x 974 (Fed. Cir. 2008) 13

Teva Pharms. USA, Inc. v. Sandoz, Inc.,
574 U.S. 318 (2015)..... 4

I. INTRODUCTION

Defendant Nearmap US, Inc. ("Nearmap") respectfully requests that the Court adopt Nearmap's proposed construction for nine claim terms that are material to the parties' patent non-infringement and invalidity disputes. Nearmap's proposed constructions are consistent with what the patents actually teach and the inv`entors allegedly invented:

> Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

Phillips v. AWH Corp., 415 F.3d 1303, 1316 (Fed. Cir. 2005) (quoting *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998)). In contrast, Plaintiffs Eagle View Technologies, Inc. ("EVT") and Pictometry International Inc. ("Pictometry") (collectively, "EagleView") assert that all nine terms should be accorded their "plain and ordinary meaning" without proposing any constructions of their own. Despite that approach, EagleView's contentions appear to construe these terms presenting a dispute with Nearmap's proposed constructions. Where, as here, the "parties present a fundamental dispute regarding the scope of a claim term, it is the court's duty to resolve it." *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008).

EagleView's positions are contrary to what it told the Patent Office during prosecution of the patents and what it told this Court in opposing Nearmap's Motion to Dismiss Under 35 U.S.C. § 101 (Dkt. No. 41). EagleView cannot have it both ways. If EagleView is to be held to the narrow reading of the patents that it argued to this Court and the Patent Office, then Nearmap does not infringe because its technology does not fit within those narrow claims. *See Phillips*,

415 F.3d at 1303. But if EagleView's current claim construction positions, which propose a much broader reading, are to be believed, then the patents are invalid because they would encompass any display of roof measurements and thereby ensnare the prior art. Under EagleView's proposed claim construction, Nearmap will file a new Motion to Dismiss. *See Liebel-Flarsheim Co. v. Medrad, Inc*., 481 F.3d 1371, 1374–75, 1380 (Fed. Cir. 2007) (invalidating patent claims on the basis of claim construction that patentee had successfully pressed in order to assert infringement, noting "[t]he motto, 'beware of what one asks for,' might be applicable here").

1. The Asserted Patents and Level of Ordinary Skill in the Art

There are eight asserted patents. U.S. Patent Nos. 8,209,152 ("the '152 Patent"), 9,135,737 ("the '737 Patent"), 10,685,149 ("the '149 Patent"), 8,670,961 ("the '961 Patent"), 9,514,568 ("the '568 Patent"), and 10,528,960 ("the '960 Patent") (collectively, "the EVT Asserted Patents") are members of two different families, with overlapping or substantially identical specifications. The two remaining asserted patents are owned by Pictometry: U.S. Patent Nos. 8,593,518 ("the '518 Patent") and 8,542,880 ("the '880 Patent").

Nearmap submits that a person of ordinary skill in the art at the time of the alleged inventions would have had at least 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. Superior education could compensate for a deficiency in work experience, and vice versa.

2. Legal Standard for Claim Construction

The claim language and specification, along with the prosecution history of the patent, are

collectively referred to as intrinsic evidence, and constitute the primary sources for interpreting claim terms. *Phillips*, 415 F.3d at 1317. Claim construction begins with the language of the patent claims because they provide "substantial guidance as to the meaning of particular claim terms." *Id.* at 1314–15 (citations omitted). The context in which a term is used in an asserted claim can be highly instructive. *See id.* at 1314. The patent specification is also important. Being part of a "fully integrated written instrument" that consists principally of a specification that concludes with claims, the claims "must be read in view of the specification, of which they are a part." *Id.* at 1315. Indeed, the specification is "the single best guide to the meaning of a disputed term" and is usually considered "dispositive." *Id.*

In addition, the prosecution history informs "the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id.* at 1317. The same is true for the prosecution histories of related applications: "[a]ny statement of the patentee in the prosecution of a related application as to the scope of the invention would be relevant to claim construction," *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004). The record from *inter partes* review of a patent is considered part of the prosecution history of that patent and related patents. *See Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1361 (Fed. Cir. 2017) ("Because an IPR [*inter partes* review] proceeding involves reexamination of an earlier administrative grant of a patent, it follows that statements made by a patent owner during an IPR proceeding can be considered during claim construction and relied upon to support a finding of prosecution disclaimer."); *Realtime Data,*

LLC v. Stanley, 554 F. App'x 923, 933–34 (Fed. Cir. 2014) (affirming construction that relied on sworn statements of patentee in related patent reexaminations).

Extrinsic evidence such as expert testimony may also be considered during claim construction to determine whether "a certain term of art had a particular meaning to a person of ordinary skill in the art at the time of the invention." *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 332 (2015). The court must "conduct a legal analysis: whether a skilled artisan would ascribe that same meaning to that term in the context of the specific patent claim under review." *Id.* That is because "experts may be examined to explain terms of art, and the state of the art, at any given time, but they cannot be used to prove the proper or legal construction of any instrument of writing." *Id*. (internal quotation marks omitted). Here, Nearmap submits that expert testimony is not needed to resolve the parties' present claim construction disputes, but Nearmap reserves the right to submit an expert declaration with its responsive brief to rebut any arguments EagleView makes in its opening brief.

II. DISCUSSION

Nearmap respectfully requests that the Court adopt Nearmap's proposed construction for the nine following claim terms that are material to the parties' patent non-infringement and invalidity disputes, at least for the reasons discussed in Nearmap's summary judgment motion.

1. **"roof report" / "roof estimate report"** in all asserted claims of the '960, '568, '961, '737, '152, and '149 Patents

EagleView's Proposed Construction	Nearmap's Proposed Construction
no construction necessary	an electronic file or paper document transformed from a roof model and/or determined roof measurements that graphically shows a representation of the roof model and/or determined roof measurements

EagleView argued at the start of this case that claim construction was needed to resolve the "requirements associated with the presence of a roof report." Aug. 5, 2021 Opp'n to Mot. to Dismiss at 25 (A547). Now, EagleView contends that no construction is needed because its infringement contentions read the terms so broadly as to encompass any display of roof measurements. Nearmap, on the other hand, seeks a narrower claim construction, which is aligned with the intrinsic evidence.

The language of the claims at issue supports Nearmap's construction because each of these claims recite a roof report that includes a roof model or roof measurement information such as pitch, slope, area, and lengths of edges, but do not recite that the model and measurement information each independently is a roof report. *See* '960 Patent, Claim 1 (JA0088); '568 Patent, Claim 1 (JA0062); '961 Patent, Claim 1 (JA0030); '737 Patent, Claim 1 (JA0186); '152 Patent, Claim 1 (JA0134); '149 Patent, Claim 1 (JA0240–41). "The fact that the claim distinguishes between [one term] and [another term in the same claim] is significant" because "[d]ifferent claim terms are presumed to have different meanings." *Bd. of Regents of the Univ. of Tex. Sys. v. BENQ Am. Corp.*, 533 F.3d 1362, 1371 (Fed. Cir. 2008).

Likewise, the specifications of the EVT Asserted Patents describe the "roof estimate report [as] ***based on*** the generated model and/or the determined roof measurement information." '152 Patent, Col.2:8–10 (JA0123) (emphasis added); '737 Patent, Col.2:1–2 (JA0175); '568 Patent, Col.11:61–67 (JA0060); '961 Patent, Col.11:54–59 (JA0028); '152 Patent, Col.17:19–24 (JA0131); '149 Patent, Col.17:57–63 (JA0237); *see* '737 Patent, Col.2:58–64 (JA0175); '152 Patent, Col.2:66–3:5 (JA0123). And the specifications repeatedly make clear that data files about a roof model are not themselves roof reports. For example, the specification describes

certain embodiments in which the three-dimensional model is stored as model data and sent directly to a customer, for example, as a "data file, in any acceptable format" that may then be used by some other computing system, such as a drawing program, for further processing, and is not sent as a roof report. These data files are provided to customers "without first being transformed into a report":

> In some embodiments, one or more of the 3D models stored as ***model data*** 606 are provided directly to the customer, ***without first being transformed into a report***. For example, a 3D model may be exported as a data file, in any acceptable format, that may be consumed or otherwise utilized by some other computing system, such as computer-aided design ("CAD") tool, drawing program, etc.

'961 Patent, Col.10:38–44 (JA0027) (emphases added).[1] Nowhere in the specifications is the claimed roof report described as the mere display of separate roof measurement information on a website. On the contrary, the patents take pains to show that a roof report is—as the term suggests—a discrete document, including as an example a six-page report that is Figure 3 of the '152 Patent (JA0096–101). The specifications also make clear that roof measurement information is not a report but is used to generate a roof report: "[r]oof measurement information ***may be used to generate a roof estimate report*** that provides and graphically shows this information." '152 Patent, Col.1:66–2:2 (JA0123) (emphasis added); '149 Patent, Col.2:18–20 (JA0229).[2]

[1] '568 Patent, Col.10:44–50 (JA0059); *see* '737 Patent, Col.7:9–18 (JA0178) ("one or more of the models stored as model data 106 are provided directly to the customer or other computing system, without first being transformed into a report" and providing that "a model and/or roof measurement information based thereon may be exported"); '152 Patent, Col.7:17–26 (JA0126) (same); '149 Patent, Col.7:44–53 (JA0232) (same); '737 Patent, Col.6:28–30 (JA0177); '152 Patent, Col.17:24–32 (JA0131).

[2] *See* '568 Patent, Col.14:39–42 (JA0061); '737 Patent, Col.8:14–20 (JA0178).

EVT's statements during prosecution of the '961 Patent confirm that Nearmap's proposed construction is correct. There, EVT argued that the prior art reference Nishitani did not render the pending independent claims obvious because Nishitani disclosed "transmitting the ***three-dimensional roof shape data having roof measurements*** as input to (***which is not a report***) the module determination component to facilitate estimation of installation cost of the photovoltaic power generator." '961 File History, Feb. 28, 2013 Remarks at 12 (JA0518) (emphases added). This is a clear and unmistakable disclaimer that excludes 3D model data with roof measurements from the construction of "roof report." *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1325–26 (Fed. Cir. 2003).[3]

2. "aerial image(s)" / "aerial image file(s)" in all asserted claims of the '960, '568, '961, '737, '152, and '149 Patents

EagleView's Proposed Construction	Nearmap's Proposed Construction
no construction necessary	photograph taken from the air by a camera

Nearmap's construction is consistent with the construction that the District of New Jersey adopted at EagleView's request: "an image taken from the air." *Eagle View Techs., Inc. and Pictometry Int'l Corp. v. Xactware Sols., Inc. and Verisk Analytics, Inc.*, Case No. 1:15-cv-7025-RBK-JS (D.N.J.), 2d Am. Joint Claim Construction & Prehearing Statement at 4–5 (A425–26); *id.*, Jury Instructions at 24 (A467).

[3] Further, in response to an *inter partes* review petition of the '152 Patent, EVT argued that the proposed "roof estimate report" construction was too broad because "'representations'—such as the claimed roof model or aerial images—are explicitly contrasted in the claim language with the separately claimed 'report' that is generated ***based on those items***, and is accordingly improper." IPR2016-00591, Patent Owner Prelim. Resp. at 7 (A305) (emphasis in original). The Patent Office ultimately determined, without addressing the parties' arguments, that it did not need to construe any claim terms.

As an initial matter, this construction is not the same as the parties' agreed-upon construction for the term "aerial image" / "aerial imagery" in the '880 Patent which has an express definition of the term. Nearmap's construction is supported by the claims, which refer to "aerial image(s)" / "aerial image file(s)" as having been "taken," just as a photograph taken by a camera. '737 Patent, Claim 1 (JA0186); '960 Patent, Claim 1 (JA0088); '961 Patent, Claims 1, 21–22, 24 (JA0030–32); '568 Patent, Claims 6, 11 (JA0063–64).

Likewise, the specifications of the EVT Asserted Patents describe aerial images created by taking a photograph: "aerial images may be originally created by cameras mounted on airplanes, balloons, satellites, etc." '152 Patent, Col.21:38–40 (JA0133); '737 Patent, Col.21:28–30 (JA0185); '149 Patent, Col.22:16–18 (JA0239); '961 Patent, Col.14:2–4 (JA0029); '568 Patent, Col.14:13–15 (JA0061). "In one embodiment, an aircraft, such as an airplane or helicopter is utilized to take photographs while flying over one or more properties. Such aircraft may be manned or unmanned." '152 Patent, Col.7:47–58 (JA0126); '737 Patent, Col.7:40–51 (JA0178); '149 Patent, Col.8:7–19 (JA0232). Further, the specifications describe that "an aerial and/or satellite imagery database" contains "photographs." '961 Patent, Col.6:34–43 (JA0025); '568 Patent, Col.6:32–42 (JA0057); '960 Patent, Col.5:52–6:2 (JA0087). The specifications also describe aerial images as containing information that is contained in a photograph taken by a camera. For example, the aerial images have "corresponding meta-information. Such meta-information may include details about the type of camera used (e.g., focal length, exposure, etc.), the position of the camera (e.g., GPS coordinates of the aircraft at the time the image was captured), the orientation of the camera (e.g., the angle of the camera), the time and/or date the image was captured, etc." '152 Patent, Col.8:10–17 (JA0126); '737 Patent, Col.8:3–9 (JA0178);

'149 Patent, Col.8:38–44 (JA0232).[4] The specifications do not describe examples of an aerial image other than that of a photograph.

The '960 Patent prosecution makes clear the Patent Office's view that the invention requires aerial images taken from the air: "[t]he claimed invention requires a combination of complicated aerial image acquisition systems ('overhead aircraft, a balloon, or satellite')." '960 File History, Jan. 2, 2015 Office Action at 5 (JA1624). EVT's response confirmed: "The present invention deals with receiving data from an outside source, in this case photographic images, processing those photographic images through a computer software program. . . ." '960 File History, July 2, 2015 Remarks at 24 (JA1677). Further, in an inventor presentation to the Patent Office, EVT described aerial images as an "acquisition" by or "taken from" a camera. '960 File History, Oct. 17, 2013 Inventor Presentation at 4, 6–7, 24 (JA2891, JA2893–94, JA2911). And the Patent Office examiner characterized the images as "having been photographed." '960 File History, Dec. 20, 2017 Applicant-Initiated Interview Summary at 1 (JA2448). So too, during '961 Patent prosecution, the Patent Office understood that aerial images have associated "camera models." '961 File History, Aug. 28, 2012 Office Action at 6 (JA0398).

[4] *See* '152 Patent, Col.20:54–58 (JA0132) ("In some embodiments, the aerial image has corresponding meta-information that includes image capture conditions, such as camera type, focal length, time of day, camera position (e.g., latitude, longitude, and/or elevation), etc."); '737 Patent, Col.20:42–46 (JA0184) (same); '149 Patent, Col.21:28–32 (JA0239) (same).

3. **"oblique image(s)"** in all asserted claims of the '518 Patent and **"wherein the primary and secondary oblique images match the perspectives from which the primary and secondary oblique images were captured"** in all asserted claims of the '518 Patent

Claim Term(s)	EagleView's Proposed Construction	Nearmap's Proposed Construction
"oblique image(s)"	no construction necessary	an image captured at an angle that is still in the original form the camera captured and has not been re-projected into a mathematical model
"wherein the primary and secondary oblique images match the perspectives from which the primary and secondary oblique images were captured"	no construction necessary	wherein the primary and secondary oblique images are displayed as captured and not re-projected, warped or distorted

Nearmap's proposed constructions align with the intrinsic evidence that an oblique image is an image in its original form as captured by a camera. EagleView apparently disagrees because it alleges infringement based on a construction that an oblique image can encompass content types that are derived from processed images. This is contrary to the intrinsic evidence.

The claim language supports Nearmap's proposed construction because each of the independent claims requires that "the primary and secondary oblique images match the perspectives from which the primary and secondary oblique images were ***captured***." '518 Patent, Claims 1, 13–16 (JA0257, JA0258–59) (emphasis added). That the claimed oblique images are required to be "captured" makes clear that the images are captured by a camera and not processed further such as in a re-projection into a mathematical model.

Likewise, the specification describes oblique images as captured by a camera (as opposed to further processed to be re-projected into a mathematical model), and that the oblique images are taken at an angle. The specification distinguishes between:

> 1. Captured Imagery—these images have the appearance they were captured by the camera or sensor employed.
>
> 2. Projected Imagery—these images have been processed and converted such that they confirm to a mathematical projection.

'518 Patent, Col.1:26–32 (JA0252). The specification then makes clear that captured oblique images fall into the first category. The specification describes that, "with an oblique image, ***because it is still in the original form the camera captured and has not been re-projected into a mathematical model***, it is not necessarily true that the compass directions meet at right angles within the image." '518 Patent, Col.2:61–65 (JA0252) (emphasis added).[5] In addition, the specification confirms that "an oblique image, by definition, is ***captured at an angle***." '518 Patent, Col.2:26–27 (JA0252) (emphases added). "The oblique perspective means that image pixels are not aligned on a rectangular grid but are aligned to the perspective that matches the perspective ***the camera has captured***." '518 Patent, Col.3:29–32 (JA0253) (emphasis added).

The prosecution history also supports Nearmap's construction. Pictometry added the claim term "wherein the primary and secondary oblique images match the perspectives from which the primary and secondary oblique images were captured" to overcome a prior art rejection based on the prior art reference Steedly. '518 File History, May 10, 2012 Claims 2–8

[5] *See* '518 Patent, Col.1:16–18 (JA0252) ("More particularly, the presently claimed and disclosed invention(s) use a methodology whereby separate obliquely captured images are panned in a continuous fashion."); '518 Patent, Col.2:26–29 (JA0252) ("Since an oblique image, by definition, is captured at an angle, it presents a more natural appearance because it shows the sides of objects and structures—what we are most accustomed to seeing.").

(JA5289–95). According to Pictometry, the specification supported the claim amendment because it disclosed "[t]he oblique perspective means that image pixels are not aligned on a rectangular grid but are aligned to the perspective that matches the perspective ***the camera has captured***." '518 File History, May 10, 2012 Remarks at 10 (JA5297) (emphasis added). The Patent Office later allowed the claims after several additional amendments. '518 File History, Sept. 10, 2013 Notice of Allowance at 1 (JA5423).

4. "calibrating / calibrate / calibrated . . . using calibration information" in all asserted claims of the '960, '568, and '961 Patents

EagleView's Proposed Construction	Nearmap's Proposed Construction
no construction necessary	converting the distance in pixels between two points on an aerial image into a physical length using image scale information after the aerial image and image scale information is received by roof measurement software

Nearmap's construction addresses: (1) what the claimed step of "calibrating" encompasses and (2) when that step takes place in the order of claimed steps. ***First,*** claim 1 of the '960 Patent specifies that the claimed process for generating a roof report involves "calibrating at least one of the first and second aerial image files . . . to convert a distance in pixels between two points on the [] aerial image file into a physical length." '960 Patent, Claim 1 (JA0088). The claim also specifies that the conversion of lengths is performed "using [] calibration information" that is "associated with" the image file, or image scale information, much like the scale on a map. '960 Patent, Claim 1 (JA0088). And all three patent specifications expressly confirm that "[d]uring calibration, the distance in pixels between two points on the image is converted into a physical length." '960 Patent, Col.6:5–6 (JA0087); '568 Patent, Col.6:45–46 (JA0057); '961 Patent, Col.6:45–47 (JA0025). The three patent

specifications further explain that "calibration information" is "typically presented as a scale marker on the image itself, or as additional information supplied by the image database provider along with the requested image," *id*., consistent with a construction of "calibration information" as "image scale information." The prosecution histories of the patents reveal that the Patent Office deemed the calibrating step as "essential to implementing the invention." '960 File History, Jan. 2, 2015 Office Action at 9 (JA1628). In amending its claims to overcome a rejection, EVT added a calibrating step that "refers to converting the distance in pixels between two points on the image into a physical length." '960 File History, July 2, 2015 Remarks at 60–61 (JA1713–14). EVT also explained that "[t]he term 'calibration information' refers to image scale information on the image." '960 File History, July 2, 2015 Remarks at 61 (JA1714).

Second, the "calibrating" step is performed by roof measurement software after receiving the aerial image file. The plain language of the claims specify that the calibration is performed on "the" aerial image file after the aerial image file is received by the processor. '960 Patent, Claim 1 (JA0088). Construing the "calibrating" term based on this order of steps not only makes grammatical sense, but also logical sense—for the processor to calibrate the aerial image files, it must first receive those files. *See Function Media, LLC v. Google, Inc*., 708 F.3d 1310, 1320 (Fed. Cir. 2013); *TALtech Ltd. v. Esquel Apparel, Inc*., 279 F. App'x 974, 978 (Fed. Cir. 2008). The specifications state that the "image[s] and calibration information" is "entered or imported" into "measurement software," '960 Patent, Col.6:11–13 (JA0087); '568 Patent, Col.6:51–53 (JA0057); '961 Patent, Col.6:51–53 (JA0025). What that means is that the measurement software receives the images and calibration information, then calibrates those images using the calibration information. *See* '960 Patent, Col.2:9–12 (JA0085). Although the "calibrating" term

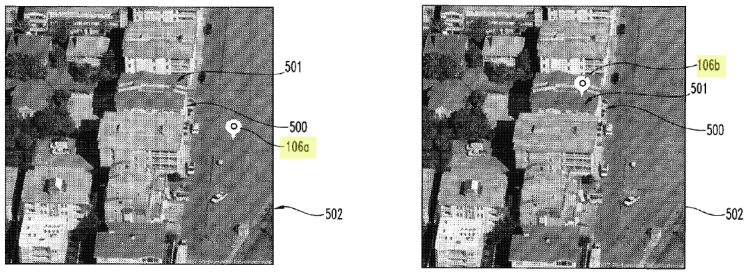
is phrased slightly differently in the claims of the '568 and '961 Patents compared to the '960 Patent discussed above, the same construction applies to each of the variations of this term across the three patents which belong to the same patent family and share identical written descriptions of the calibrating step. *See* '960 Patent, Col.6:3–11 (JA0087); '568 Patent, Col.6:43–50 (JA0057); '961 Patent, Col.6:44–50 (JA0025); *see also Nystrom v. TREX Co., Inc.*, 424 F.3d 1136, 1143 (Fed. Cir. 2005)

5. **"providing a visual marker that is moveable on a computer monitor around said region, said visual marker initially corresponding to said first location data, wherein said visual marker may be moved to a final location on top of the building to more precisely identify the location of the building roof structure, the final location having location coordinates"** in all asserted claims of the '880 Patent

EagleView's Proposed Construction	Nearmap's Proposed Construction
no construction necessary	providing a shape, pointer, label, icon, avatar or other indicator that initially corresponds to the first location data input by the user, and that is draggable on a computer monitor from its initial location to a final location on top of a building to more precisely identify the location of the building structure corresponding to the first location data

The language of the claims requires that the visual marker be "moveable," and further recites "providing a computer input capable of signaling user-acceptance of the final location of said marker." '880 Patent, Claims 1, 14 (JA0289–90). The dependent claims also distinguish between a marker and "outline drawings around outlines corresponding to roof planes based on tracing from said imagery," such as a polygon or line measurement tool. '880 Patent, Claims 4, 7, 17, 19 (JA0289–90). The specification describes the visual marker as moveable "by click[ing] and dragging via computer mouse, arrows, or otherwise." '880 Patent, Col.10:6–12 (JA0287); *see* '880 Patent, Col.1:47–54 (JA0261) (describing marker as "moved to"); '880 Patent,

Col.10:12–15 (JA0287) ("Optionally, in FIG. 4C when said marker has been moved to final location 106b, the user may activate a selection confirmation, such as confirm selection button 104, enter, checkbox or otherwise."). For example, in Figures 4B and 4C, a single marker is moved from an initial position (Fig. 4B, ref. 106a) to a final position (Fig. 4C, ref. 106b):



'880 Patent, Figs. 4B, 4C (JA0266–67) (excerpts; highlighting added for emphasis).

EagleView's apparent attempt to equate a displayable marker with a moveable marker fails because the definition of a "visual marker" distinguishes between them, as does the definition EVT agreed to in the '880 Patent *inter partes* review proceeding. '880 Patent, Col.2:47–48, 5:9–12 (JA0283, JA0285); IPR2016-00594, Feb. 8, 2016 Petition at 6 (A168); IPR2016-00594, June 2, 2016 Patent Owner Prelim. Resp. at 5 (A379).

6. "three-dimensional model" / "3D model" in all asserted claims of the '960, '568, '152, and '149 Patents; claims 21, 24, and 25 of the '961 Patent; and claims 10, 17, and 25 of the '737 Patent

EagleView's Proposed Construction	Nearmap's Proposed Construction
no construction necessary	a three-dimensional representation of a building roof that is generated based on aerial images with different views of the roof, which provides roof measurement information such as length, pitch, and area of sections of the roof

As with the "roof report" term, EagleView argued to the Court at the outset of this case that the patents did not just claim a generic three-dimensional model, but a very specific type of

model, in order to avoid a ruling of invalidity under Section 101. Aug. 5, 2021 Opp'n to Mot. to Dismiss at 11 (A533). According to EagleView, the claims "absolutely show how" and "walk[] through a very specific set of steps in order to create a three-dimensional model of the roof." Nov. 8, 2021 Mot. to Dismiss Hr'g Tr. at 35:9–14 (A584). Of particular note, EagleView represented to the Court that Nearmap's motion should be denied because claim construction was needed relating to "the claimed requirements for creating and projecting a 3D model." Aug. 5, 2021 Opp'n to Mot. to Dismiss at 25 (A547).

EagleView now reverses course, asserting that the claimed 3D model is nothing special and that the plain and ordinary meaning applies. But the meaning of a patent claim is not a nose of wax, to be twisted one way to avoid § 101 invalidity and another to attempt to find infringement. *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1351 (Fed. Cir. 2001). If the claimed three-dimensional model is nothing more than a visual rendering of a three-dimensional object, as EagleView appears to assert in its infringement contentions, the patent claims are invalid. *See Liebel-Flarsheim*, 481 F.3d at 1374–75, 1380.

EagleView's about-face notwithstanding, construction of the term "three-dimensional model" is needed to resolve the parties' disputes regarding claim scope. According to EagleView's infringement contentions, any visual rendering of a three-dimensional object can satisfy this limitation including two-dimensional outline drawings and three-dimensional meshes from which roof measurements are not made. This reading is contrary to the intrinsic evidence, whereas Nearmap's construction is supported by the intrinsic evidence.

The majority of EagleView's patent claims say little about the three-dimensional model. And the few claims that do recite any specifics about the three-dimensional model draw a

distinction with a "line drawing" or "wire frame model." For example, Claims 1, 4, 6, 9, 12, 16, 26, 27, 29, 30, 31, 34 and 35 of the '737 Patent all recite line drawings overlaid on an aerial image, whereas claims 2, 11, 13, 15, 17, 18 and 25 separately recite a "three dimensional model." (JA0186–88). Further, dependent claims 2 and 25 of the '737 Patent recite modifying a three-dimensional model "before displaying," or "based on the modification of," a line drawing, establishing that the three-dimensional model is not the same as a line drawing. (JA0186–88). Similarly, claim 37 of the '737 Patent recites that "corresponding changes in a 3D model of the roof [are] based on the changes made by [a] user to [a] wire frame model," establishing that a "three-dimensional model" is not the same as a "wire frame model." (JA0188). This is the same for the claims of the related '152 and '149 Patents. *See* '152 Patent, Claims 1, 12, 16 (JA0134–35) (distinguishing "three-dimensional model" from a "projection of [a] feature" of the model as a "line drawing" on an aerial image); '149 Patent, Claims 11, 12 (JA0241) (distinguishing between three-dimensional model and "wireframe rendering" of the model). And nothing about the claims of the '960, '568, and '961 Patents suggest otherwise. All the patent claims that include "roof measurement information" further show that such information is based on a three-dimensional model, or at the very least do not say otherwise. *See*, *e.g.*, '960 Patent, Claim 1 (JA0088) (determining pitch and area based on image analysis that involves constructing three-dimensional model); '152 Patent, Claims 9, 12 (JA0134–35) ("transmitting roof measurement information based at least in part on the modified three-dimensional model"); '149 Patent, Claims 9, 13 (JA0241) ("transmitting roof measurement information based on the modified model of the roof," which "includes" modified "three-dimensional model of the roof").

EX2018 / IPR2022-00734 / Page 21 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Further, EagleView knew how to recite a "three dimensional wire frame model" and certainly could have done so if that is what it intended to claim. But EagleView chose not to do so, and it cannot rewrite its claims now to assert infringement. The '568 and '961 Patent specifications describe the three-dimensional model as something separate from a rendered view of the model.[6] Contrary to EagleView's seeming infringement argument that a wire frame model itself can be the claimed "three-dimensional model," the specifications of the '737, '152, and '149 Patents describe "the construction of a three dimensional wire frame model of a building roof, based on the specification of roof features by an operator" separately from a "3D model." '737 Patent, Col.13:38–14:12 (JA0181); '152 Patent, Col.13:52–14:23 (JA0129); '149 Patent, Col.14:20–14:53 (JA0235). That generation of the "three dimensional wire frame model" is described as being constructed by using a "drawing tool" to "specify roof features, such as edges, ridges, valleys, corners, etc." *Id*. By contrast, the generation of the "three

[6] *See, e.g.*, '568 Patent, Col.14:46–49 (JA0061) ("The roof estimate report may be an electronic file that includes images of the building and/or its roof, as well as line drawings of one or more views of the three-dimensional model of the building roof."); '961 Patent, Col.14:35–38 (JA0029) (same); '737 Patent, Col.8:14–20 (JA0178) ("The roof estimate report may be based on a computer model (e.g., a 3D model) of the roof, and includes one or more views of the model" and "the various views of the model are presented as annotated line drawings, which provide information about the roof, such as the roof section areas, roof section edge lengths, roof section pitches, etc."); '737 Patent, Col.14:2–12 (JA0181) (distinguishing between "outline," "wire frame," "series of connected line segments that result in a closed polygon representing a planar roof section" and a "3D model that corresponds to roof"); '737 Patent, Col.14:62–15:6 (JA0178–79) (distinguishing between "shaded wire frame [] representation of the 3D model" and describing changes made to "the underlying 3D model" when "wire frame" is "manipulat[ed]"); '737 Patent, Col.15:32–37 (JA0179) (distinguishing between "3D model" of roof and view of "wire frame [] representation of the 3D model of the roof"); '737 Patent, Col.22:42–59 (JA0185) (distinguishing between "three-dimensional model" and "closed polygon that represents the outline or perimeter of the planar roof section"); '152 Patent, Col.22:50–67 (JA0133) (same); '149 Patent, Col.22:37–51 (JA0239) (same).

dimensional model" is described, if at all, as being constructed by image analysis, such as with a reference grid. *See, e.g.*, '737 Patent, Col.4:66–5:27 (JA0181–82). Likewise, the '568 and '961 Patent specifications describe the three-dimensional model as that from which roof measurements are made. *See, e.g.*, '568 Patent, Col.6:54–7:23 (JA0057–58) (describing area, pitch, and length measurements as "information from the reconstructed [3D] model"); '961 Patent, Col.6:54–7:22 (JA0025–26) (same). The '737, '152, and '149 Patent specifications also state, consistent with Nearmap's proposed construction, that the Roof Estimation System "generates a model of the roof of the building, which is ***then utilized to determine roof measurement information***. The roof measurement information may include measurements ***such as lengths of the edges of sections of the roof, pitches of sections of the roof, areas of sections of the roof, etc***. '737 Patent, Col.2:52–58 (JA0175) (emphasis added); '152 Patent, Col.2:60–66 (JA0123) (same); '149 Patent, Col.3:13–18 (JA0230) (same). The '149 Patent specification similarly states in the Summary section: "[T]he roof estimation system is configured to determine roof measurement information and generate a roof estimate report ***based on*** the generated model and/or the determined roof measurement information." '149 Patent, Col.2:26–29 (JA0229) (emphasis added). And, again, nothing in the '960 Patent specification is to the contrary.

The prosecution histories, too, are replete with statements that repeatedly and consistently describe the three-dimensional model as used to determine roof measurement information. During the prosecution of the '578 Patent—the parent patent to all three of the '960, '568, and '961 Patents—EVT argued that the prior art did not teach or suggest "determining measurements by constructing a three dimensional geometry of the roof based on the received aerial images,"

'578 File History, Jan. 18, 2011 Remarks at 31 (A033). Additionally, in opposition to Nearmap's petition for *inter partes* review of the '961 Patent, EVT asserted that a three-dimensional model requires "calculat[ing] or determin[ing] the actual pitch of the roof sections depicted in the model based on performing aerial image analysis." IPR2022-01009, Sept. 16, 2022 Patent Owner's Prelim. Resp. at 9–10 (A655–56). EVT further argued that "generally depicting an angled roof ***visually*** in a 3D rendering is not the same as calculating or determining a numerical pitch value of a roof." IPR2022-01009, Sept. 16, 2022 Patent Owner's Prelim. Resp. at 10 (A656) (emphasis in original). EVT also argued that the prior art did not disclose the required "three-dimensional model" because "the [prior art] model is ***not*** calculating or determining the pitch of the roof sections." IPR2022-01009, Sept. 16, 2022 Patent Owner's Prelim. Resp. at 11 (A657) (emphasis added).

7. "primary oblique image including overlapping data" in all asserted claims of the '518 Patent

EagleView's Proposed Construction	Nearmap's Proposed Construction
no construction necessary	primary oblique image including common features with an adjacent oblique image

EagleView asks that this term not be construed. But EagleView's infringement contentions interpret this term to mean content that is not an oblique image or a single oblique image where there is no overlapping data.

Nearmap's construction is consistent with "what the inventors actually invented and intended to envelop with the claim," *Phillips*, 415 F.3d at 1316, which is to allow "panning oblique images in a continuous manner . . . to provide a useable means of navigation." '518 Patent, Col.9:31–33 (JA0256); '518 Patent, Col.3:55–62 (JA0253); *see* '518 Patent, Title (JA0243) ("Computer System for Continuous Oblique Panning"). The '518 Patent describes

only two ways in the art to "create the appearance of a continuous, seamless image[:] by simply displaying such images adjacent to one another, or by overlapping them." '518 Patent, Col.3:19–22 (JA0253). But the problem was that "oblique images are not grid aligned and can be captured from any direction," which means that "a feature on one image will not look the same on another image." '518 Patent, Col.3:26–28 (JA0253). To "allow continuous panning of oblique images," the alleged invention of the '518 Patent is to allow for the continuous panning of oblique images by overlapping adjacent oblique images that have common features. Thus, the claims recite a "primary oblique image including overlapping data" as a primary oblique image that is "adjacent" to a "secondary oblique image" and depicting "a first area" that "partially overlap[s]" with a "second area" depicted in the "adjacent secondary oblique image." '518 Patent, Claim 1 (JA0257); '518 Patent, Claims 13–16 (JA0258). And the words "oblique image" and "overlapping data" cannot be read out from the claims as EagleView appears to do. *See Playtex Prods., Inc. v. Procter & Gamble Co.*, 400 F.3d 901, 909 (Fed. Cir. 2005) (reversing claim construction that read "substantially flattened" as "flat").

The specification of the '518 Patent confirms that Nearmap's construction is correct because the embodiments describe overlapping data between a primary oblique image and at least one adjacent oblique image; there is no embodiment that describes overlapping data between a primary oblique image and a non-adjacent oblique image. For example, Figure 2 of the '518 Patent illustrates the overlapping data between a primary image and an adjacent image:

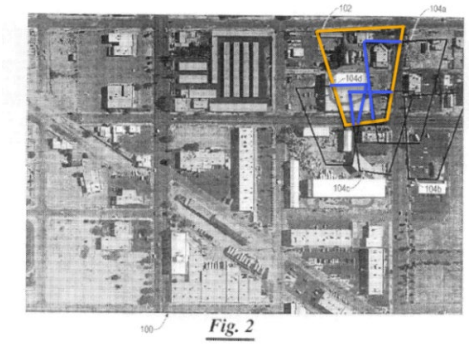


Fig. 2

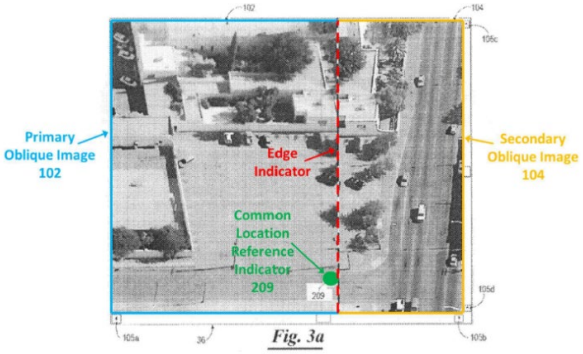


Fig. 3a

'518 Patent, Fig. 2 (JA0248) (primary oblique image 102 annotated in orange and overlapping sections of secondary oblique images 104 annotated in blue); IPR 2022-00735, Aug. 5, 2022 Patent Owner's Prelim. Resp. at 6 (A607) (annotations added by EagleView). The specification explains that "the overlapping portions of the primary oblique image 102 and secondary oblique images 104a-d represent the same features of the area of interest." '518 Patent, Col.8:61–9:2 (JA0255). Thus, the primary oblique image includes common features with adjacent oblique images. In addition, Figure 3a shows overlapping data between a primary image and an adjacent image. IPR 2022-00735, Aug. 5, 2022 Patent Owner's Prelim. Resp. at 6 (A607). The Patent describes Figure 3a as "a pictorial representation of a primary oblique image and a secondary oblique image with an edge indicator consisting of a grayscale secondary oblique image and a Reference Indicator displayed." '518 Patent, Col.5:64–67 (JA0254); '518 Patent, Fig. 3a (JA0249). The reference indicator is a "visual effect that is used to indicate a common area of interest between two or more images." '518 Patent, Col.6:54–56 (JA0254). In Figure 3a, the reference indicator shows the common area of interest between primary oblique image 102 and secondary oblique image 104. *See* '518 Patent, Fig. 3a (JA0249).

The prosecution history supports Nearmap's construction. Pictometry added the claim term "the primary oblique image including overlapping data" to overcome a rejection based on

prior art (the Steedly reference) that Pictometry said did not teach "panning within a set of oblique images that overlap and represent an area of interest, as set forth in each of the independent claims 1, 13, 14, 15 and 16." *See* '518 File History, Sept. 9, 2011 Remarks at 12–13 (JA5243–44). The Patent Office rejected the pending claims because Steedly taught that "a set of overlapping oblique images is joined to form a single seamless image of a scene." '518 File History, May 10, 2011 Office Action at 4 (JA5205). Pictometry responded "any overlapping parts of the original images are not used in the final mosaic image [taught by Steedly], and the images formed by segmenting the final mosaic image do not overlap." '518 File History, Sept. 9, 2011 Remarks at 12 (JA5243). The Patent Office allowed the amended claims as the "prior art of record fail[s] to teach/suggest instructions for panning within the primary oblique image, the primary oblique image including overlapping data." '518 File History, Notice of Allowance at 2 (JA5423). This is a clear and unmistakable disclaimer of panning across non-overlapping oblique images. *Omega*, 334 F.3d at 1325–26.

8. "the [first and second / plurality of] aerial images . . . taken independent[ly] of each other" in all asserted claims of the '568 Patent; and claims 1, 2, 7, 21, 22, 24, 25 of the '961 Patent

EagleView's Proposed Construction	Nearmap's Proposed Construction
no construction necessary	aerial images that were taken by a camera without a known spatial relationship to each other

EagleView seeks to avoid construction of this term, apparently so that it can apply it to mean simply aerial images taken separately from each other, such as with different times, dates, or views. But this is contrary to the intrinsic evidence, most significantly EVT's own statements made about the purported invention during reexamination of the '436 Patent (the parent of the '961 Patent and grandparent of the '568 Patent), which is part of the prosecution histories of the

'568 and '961 Patents.[7] *See Realtime Data*, 554 F. App'x at 933–34 (affirming construction that relied on sworn statements of patentee in related patent reexaminations). There, EVT repeatedly, consistently, and exclusively described aerial images "taken independently of each other" as aerial images without camera data, such as the position of the camera when the aerial image was taken. For example:

- EVT argued that its purported invention is distinguishable over prior art that uses stereoscopic pairs of images to measure roofs, explaining that "[t]he images in a stereoscopic pair are ***not taken independently*** of each other, as they include geometric image data and parameter data that ***contain highly detailed information on the camera angle of the image pairs with respect to each other***." '436 Reexamination, Oct. 25, 2013 Reply to Office Action at 14 (A059) (emphasis added). EVT later repeated this argument, further distinguishing independently taken images from images taken at different times and dates. '436 Reexamination, Oct. 25, 2013 Reply to Office Action at 28 (A073).

- EVT also argued that the "use of such stereoscopic pairs of images and associated stereoscopic parameter data . . . ***exclude[es] and teach[es] away from the use of images taken independent of each other***." '436 Reexamination, Oct. 25, 2013 Reply to Office Action at 28–29 (A073–74) (emphasis added).

- In an interview with the examiner to discuss the patentability of its claims, EVT provided a slide presentation in which it again described independent images as images with "camera locations ***unknown.***" '436 Reexamination, Oct. 25, 2013 Reply to Office Action at 10, Attachment 1 (A114) (emphasis in original).

- EVT also argued that "***the claimed invention of the '436 Patent*** is directed to determining roof measurements of roofs in images that have disparate types of view of the roof . . . [that] do ***not*** have the ***specific information about how the image was acquired and details about the camera position when the image was taken***." '436 Reexamination, Oct. 25, 2013 Reply to Office Action at 49–50 (A094–95) (emphases in original).

Further, in a declaration that EVT submitted to the Patent Office, Chris Pershing, one of the named inventors, testified that "[w]hile the various image file libraries might include two or

[7] That the pending reexamination claims for the '436 Patent did not recite "taken independently of each other" does not change the analysis given that the related patents share common subject matter with the claims being construed and indeed, the same specification as the patents here.

more images of the same house, taken at different angles, ***these were taken independent of each other and I would not be able to obtain any data about the location of the camera for each of the images***." '436 Reexamination, Oct. 25, 2013 Reply to Office Action at 14, Attachment 2 at 2 (A145) (emphasis added). This led him to try to solve the problem of "whether, ***without being given specific information about how the image was acquired and details about the camera position when the image was taken***[,] it would be possible to determine the pitch of sloped roof sections." '436 Reexamination, Oct. 25, 2013 Reply to Office Action at 14, Attachment 2 at 2 (A145) (emphasis added). So too, during prosecution of the related '960 Patent, which presented pending claims reciting the term "the plurality of aerial images having been taken independent of each other," '960 File History, Nov. 10, 2016 Claims at 8–12 (JA2139–43), EVT explained that such images are not images in which the cameras have been "calibrated to each other" or images that are "stereoscopic pairs," '960 File History, Nov. 10, 2016 Remarks at 23 (JA2154); *see id.*, May 26, 2017 Claims at 2–7 (JA2350–55); *id.*, May 26, 2017 Remarks at 18–19 (JA2366–67).[8]

III. CONCLUSION

For the foregoing reasons, Nearmap respectfully requests the Court adopt its proposed claim constructions.

[8] EVT later amended its claims to remove this limitation to overcome a prior art rejection, but EVT reserved its rights to pursue the full scope of its prior claims in a subsequent related patent application. '960 File History, Dec. 21, 2017 Remarks at 9 (JA2459). EVT then pursued the claims in a later application that resulted in the '568 and '961 Patent claims.

Submitted this 27th day of January, 2023

By: */s/ Brent O. Hatch*

Brent O. Hatch
HATCH LAW GROUP, PC

Nicholas Groombridge
Jennifer H. Wu
Jenny C. Wu
Jennifer Rea Deneault
Scott E. Miller
Timothy J. Beavers
GROOMBRIDGE, WU,
BAUGHMAN & STONE LLP
565 Fifth Avenue, Suite 2900
New York, New York 10017
332-269-0030 (telephone)
nick.groombridge@groombridgewu.com
jennifer.wu@groombridgewu.com
jenny.wu@groombridgewu.com
jenna.deneault@groombridgewu.com
scott.miller@groombridgewu.com
timothy.beavers@groombridgewu.com

Attorneys for Defendant Nearmap US, Inc.

EX2018 / IPR2022-00734 / Page 30 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Brent O. Hatch (5715)
Hatch Law Group, PC
22 E. 100 S. Suite 400
Salt Lake City, Utah 84111
Telephone: (801) 869-1919
hatch@hatchpc.com

Attorney for Defendant

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF UTAH

EAGLE VIEW TECHNOLOGIES, INC. and PICTOMETRY INTERNATIONAL CORP.,

Plaintiffs,

v.

NEARMAP US, INC.,

Defendant.

APPENDIX TO DEFENDANT'S MOTION FOR CLAIM CONSTRUCTION

Case No.: 2:21-cv-00283(TS)(DAO)

Judge: Ted Stewart

Magistrate Judge: Daphne A. Oberg

Date	Description	Page
Jan. 18, 2011	U.S. Patent 8,145,578 File History – Amendment and Remarks	A003
Oct. 25, 2013	U.S. Patent 8,078,436 Reexamination File History – Amendment and Remarks	A046
Oct. 25, 2013	U.S. Patent 8,078,436 Reexamination File History – Amendment and Remarks, Attachment 1	A108
Oct. 25, 2013	U.S. Patent 8,078,436 Reexamination File History – Amendment and Remarks, Attachment 2	A143
Feb. 8, 2016	IPR2016-00594 Petition	A157

Date	Description	Page
May 23, 2016	IPR2016-00596 Patent Owner's Preliminary Response	A215
May 23, 2016	IPR2016-00591 Patent Owner's Preliminary Response	A292
June 2, 2016	IPR2016-00594 Patent Owner's Preliminary Response	A369
Feb. 8, 2017	*EagleView v. Verisk*, 2d Amended Joint Claim Construction and Prehearing Statement (Dkt. No. 178)	A422
Sept. 26, 2019	*EagleView v. Verisk*, Jury Instructions (Dkt. No. 794)	A443
Aug. 5, 2021	*EagleView v. Nearmap*, EagleView's Opposition to Motion to Dismiss (D. Utah) (Dkt. No. 41)	A518
Nov. 8, 2021	*EagleView v. Nearmap*, Hearing Transcript for Motion to Dismiss	A550
Aug. 5, 2022	IPR2022-00735 Patent Owner's Preliminary Response	A598
Sept. 16, 2022	IPR2022-01009 Patent Owner's Preliminary Response	A647

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Chris Pershing et al.
Application No.	:	12/148,439
Filed	:	April 17, 2008
For	:	AERIAL ROOF ESTIMATION SYSTEM AND METHOD

Examiner	:	David J. Clark
Art Unit	:	3628
Docket No.	:	290115.401
Date	:	January 18, 2011

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Commissioner for Patents:

In response to the Office Action dated August 16, 2010, please amend the application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 8 of this paper.

Amendments to the Drawings begin on page 22 of this paper and include the attached Replacement Sheets.

Remarks begin on page 23 of this paper.

Amendments to the Specification:

Please replace the paragraph beginning at page 1, line 18, with the following redlined paragraph:

Homeowners typically ask several roofing contractors to provide written estimates to repair or replace a roof on a house. Heretofore, the homeowners would make an appointment with each roofing contractor to visit the house to determine the style of roof, take measurements, and to inspect the area around the house for access and cleanup. Using this information, the roofing contractor then prepares a written estimate and then timely delivers it to the homeowner. After receiving several estimates from different ~~rooting~~ roofing contractors, the homeowner then selects one.

Please replace the paragraph beginning at page 3, line 2, with the following redlined paragraph:

These and other objects are met by the system and method disclosed herein that allows a company that needs the sizes, dimensions, slopes and orientations of the roof sections on a building in order to provide a written estimate. The system includes the use of a roof estimating software program and ~~an~~ a location-linked, image file database. During use, the physical address or location information of the building is inputted into the program which then presents aerial images of roof sections on the building at the specific address location. An overhead aircraft, a balloon, or satellite may produce the aerial images. An image analysis and calibration is then performed either manually or via a software program that determines the geometry, the slopes, the pitch angles, and the outside dimensions of the roof sections. The images may also include the land surrounding the roof sections and building which the estimating company can use to factor in additional access or clean-up costs.

Please replace the paragraph beginning at page 3, line 14, with the following redlined paragraph:

In the first embodiment of the system, the roof company is contacted by a potential customer requesting an estimate for repair or replacement of a roof on their building.

The roof company uses a local computer with an estimating software program loaded into its working memory to access an image file database located on the computer or on a remote server connected via a wide area network to the local computer. The image file database contains image files of various buildings in the roof ~~companies~~ company's service area. When a request for an estimate is received from a potential customer, the roof company enters the customer's address into the software program and aerial images of the building are then presented to the roof company. The roof company then manually measures or uses a roof estimation software program to determine the slopes, dimensions, and other relevant geometric information of the roof sections on the buildings. From these determinations, the overall shape, slopes and square footage of the roof sections are determined and a report is produced. After the report has been prepared, the images are reviewed again for special access and cleanup tasks which can be added to the final estimate before transmission to the potential customer.

Please replace the paragraph beginning at page 4, line 6, with the following redlined paragraph:

In another embodiment, the roof estimate software program and image file database are both stored on one or more ~~a~~ remote computers and accessed by the roof company via a wide area network. The roof company uses an assigned user name and password to log onto the website and ~~accessed~~ access the computer. After logging on, the roof company logs then submits the new customer's address, other relevant job related information, and a request for a report from the roof estimation service. An estimation service associated with the website uses the address information to obtain the images of the roof sections on the building(s) and uses the roof estimation software program and calibration module to determine the relevant geometry, pitch angles, dimensions, and surface areas of the building's roof. The service then produces and sends a report to the roof company. The company then uses the report to prepare a final estimate that is then delivered to the potential customer.

Please replace the paragraph beginning at page 4, line 16, with the following redlined paragraph:

In another embodiment of the system, a roof estimating website is ~~created~~ designed to receive requests for roof estimates directly from potential customers in a region. The estimation service that owns and operates the website is associated with various roof companies that provide roof-related services in the region serviced by the website. When a potential customer contacts the website and requests an estimate for a roof repair, replacement or installation of equipment, the ~~potential's~~ potential customer's name, address, and contact information is first submitted on the website. The estimation service representative, enters the address of the building into the roof estimation software program. The aerial images of the buildings are then obtained and analyzed by the service representative to extract the relevant geometric information about the structures. A report containing the geometric information obtained from the aerial images and other relevant project related information supplied by the potential customer are transmitted to roof companies associated with the estimation service. The roof company reviews the information then prepares an estimate which then can be uploaded to the roof estimating website server which then forwards the estimate to the potential customer, or ~~sent~~ sends from the roof company directly via email, fax or mail to the potential customer.

Please replace the paragraph beginning at page 6, line 16 and ending at page 7, line 10, with the following redlined paragraph:

Referring to the accompanying ~~Figs~~Figures, there is described a system 10 and method that allows a roof company 70 to provide a final estimate 102 to a potential customer 90 to install equipment or to repair or replace the roof on a building 92 using aerial images of the building 92. The system 10 includes an estimating software program 50 designed to receive an address for the building 92. The software program 50 is linked to an aerial image file database 52 that contains aerial images files 54 of various building 92 in a region. The aerial image files 54 may be taken any available means, such as an aircraft, balloon, a satellite, etc. As shown in Fig. 3, the image files 54 typically include at least one a top plan view 65 and a perspective view 66 of the building 92. The image files 54 may also include a wide angle image file 67 showing

the building 92 and the surrounding areas ~~93~~ 67 around the building 92. In one embodiment, an image analysis and calibration module ~~52~~ 56 is linked to the software program 50 that enables the roof company 70 to closely estimate the dimensions and slopes of the roofs of the buildings 92 shown in the views 65, 66. By simply inputting the customer's address into the software program 50, the roof company 70 is able view the customer's roof from the aerial image files 54 using a remote computer 72, determine the dimensions and slopes of the roof sections that make up the roof, and prepare a preliminary report 101 which is then used to prepare a final estimate 102 that is then delivered to the potential customer 90.

Please replace the paragraph beginning at page 7, line 11 and ending at page 7, line 19, with the following redlined paragraph:

Fig. 1 is an illustration showing the system 10 used by a potential customer 90 requesting a roof estimate from a roof company 70 that uses the system 10 described above. The potential customer 90 may be the building tenant, owner or insurance company. The roof company 70 uses a computer 72 which may connect to a wide area network 60. The customer 90 contacts the roof company 70 via his or her computer 91 and the wide area network 60 or by a telecommunication network 96, and requests a roof estimate ~~100~~ for his building 92 located at a public address 93. (i.e. 23 W. 3rd St). The roof company 70 then processes the request 100 which leads to a final estimate 102 being delivered to the potential customer's computer 91 or via email, fax or postal service to the potential customer 90.

Please replace the paragraph beginning at page 7, line 20 and ending at page 8, line 13, with the following redlined paragraph:

There are several different ways the system 10 can be setup. Fig 1 shows a first embodiment of the system 10 where the roof company 70 operates a remote computer 72 with a display 74 and a keyboard 75 or similar input means. A roof estimating software program 50 is loaded into the working memory 73 of the remote computer 72. The software program 50 is able to retrieve aerial images of buildings from the database 52 containing aerial images files 54 of buildings located in the region served by the roof company 70. In the first embodiment shown

in Fig. 1, the remote computer 72 is linked or connected to a database 52 containing aerial images files 54 of the buildings. The software program 50 includes a calibration module 56 that enables the roof company 70 to determine the angles and dimensions of various roof sections shown in the images files 54. After the angles and dimensions are determined, the combined square footage of the building 92 can be determined which is then used to create a preliminary report 101. The roof company 70 then reviews the wide angle image file ~~67~~ 94 (see Fig. 4) to determine if the building 92 has special access and clean up factors that may impact the final estimate 102. Once the preliminary report 101 or the final estimate 102 is prepared by the roof company 70, one or both can be transmitted to the customer 90 via the wide area network 60, the telecommunication network 96, or by postal service.

Please replace the paragraph beginning at page 9, line 20 and ending at page 10, line 7, with the following redlined paragraph:

Figs. 5A-5F are individual pages that make up a representative report. In Fig. 5A, a cover page 103 ~~that~~ lists the address of the building and an overhead aerial image of the building. In Fig. 5B, a second page 104 of the report is shown that shows wide overhead perspective view of the building at the address with the surrounding areas more clearly shown. Fig. 5C is the third page ~~105~~ 106 of the report which shows a line drawing of the building showing ridge and valley lines, dimensions 110 and a compass indicator. ~~Fig 5D~~Fig. 5D is an illustration of the fourth page ~~106~~ 107 of the report showing the pitch angle 111 of each roof section along with a compass indicator. Fig. 5E is an illustration of the fifth page ~~107~~ 108 of the report showing the square footage 112 of each roof section along with the total square foot area value. ~~Fig 5F is~~Fig. 5F is an illustration of a sixth page ~~108~~ 109 of the report showing an overall, aerial line drawing of the building where notes 113 or written comments may be written.

Please replace the paragraph beginning at page 12, line 4 and ending at page 12, line 9, with the following redlined paragraph:

Information from the reconstructed model is used to generate a report containing information relevant to the customer. If the report is meant for delivery to a roofing company, the information in the report may include total square footage, square footage 112 and pitch 111 of each section of roof, linear measurements 110 of all roof segments, identification and measurement of ridges and valleys, and different elevation views rendered from the 3D model (top, side, front, etc).

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A system for remotely determining measurements of a roof, comprising:

a computer including an input means, a display means and ~~working~~ a non-transitory memory; and

a roof ~~estimating~~ estimation software program stored in the ~~working~~ non-transitory memory and operable to cause a processor of the computer to:

receive location information of a building in ~~the~~ a selected region;

~~present~~ receive aerial image files showing ~~the~~ roof sections of a roof of said building ~~and showing measurements of the roof; and,~~

determine, based on said aerial image files, ~~the~~ measurements of the roof including size, geometry, and pitch of the roof sections of the roof of said building and outputting a report having the determined measurements therein.

2-3. (Canceled)

4. (Currently Amended) The system as recited in claim 1, further comprising an aerial image file database containing a plurality of aerial images of roofs of buildings, the aerial image file database loaded into said ~~working~~ non-transitory memory of said computer.

5. (Currently Amended) The system as recited in claim 1, ~~further comprising~~ wherein the roof estimation software program stored in the non-transitory memory is further operable to cause the processor of the computer to access an aerial image file database that is located on a second computer that is remote from said computer.

6-7. (Canceled)

8. (Currently Amended) The system as recited in claim 1, wherein the roof estimation software program stored in the non-transitory memory is further ~~including a network connected~~ operable to ~~said~~ cause the processor of the computer~~, wherein potential customers are able transmit via said network~~ to receive a request for an estimate ~~to~~ at said computer from remote locations.

9. (Canceled)

10. (Currently Amended) ~~The system as recited in claim 1, wherein the roof estimation software program is further operable to~~ A system for remotely determining measurements of a roof, comprising:

a computer including an input means, a display means and a non-transitory memory; and

a roof estimation software program stored in the non-transitory memory and operable to cause a processor of the computer to:

receive location information of a building in a selected region;

receive aerial image files showing roof sections of a roof of said building;

determine, based on said aerial image files, measurements of the roof including size, geometry, and pitch of the roof sections of the roof of said building; and

produce a roof construction estimate based on the determined measurements.

11-13. (Canceled)

14. (Currently Amended) The system as recited in claim 1, wherein the roof estimation software program is further operable to cause the processor of the computer to produce an HVAC installation estimate based on the determined measurements.

15. (Currently Amended) The system as recited in claim 1, wherein the roof estimation software program is further operable to cause the processor of the computer to produce a solar panel installation estimate based on the determined measurements.

16. (Currently Amended) ~~The system as recited in claim 1, wherein the roof estimation software program is further operable to~~ A system for remotely determining measurements of a roof, comprising:

a computer including an input means, a display means and a non-transitory memory; and

a roof estimation software program stored in the non-transitory memory and operable to cause a processor of the computer to:

receive location information of a building in a selected region;

receive aerial image files showing roof sections of a roof of said building; and

determine, based on said aerial image files, measurements of the roof including size, geometry, and pitch of the roof sections of the roof of said building; and

produce a roof gutter installation estimate based on the determined measurements.

17. (Currently Amended) ~~The system as recited in claim 1, wherein the roof estimation software program is further operable to~~ A system for remotely determining measurements of a roof, comprising:

a computer including an input means, a display means and a non-transitory memory; and

a roof estimation software program stored in the non-transitory memory and operable to cause a processor of the computer to:

receive location information of a building in a selected region;

receive aerial image files showing roof sections of a roof of said building; and

determine, based on said aerial image files, measurements of the roof including size, geometry, and pitch of the roof sections of the roof of said building; and

produce a repair or replacement estimate based on the determined measurements.

18. (Currently Amended) A method for determining measurements of a roof, comprising:

~~selecting a roof estimation system that includes a computer with a roof estimation software program loaded into its working memory, said roof estimation software uses aerial image files of buildings in a selected region and a calibration module that allows the size, geometry, and pitch of a roof section to be determined from said aerial image files~~receiving, by a roof computer system, a request for a measurement of a roof of a building;

~~submitting a request for a measurement of a~~ receiving, by the roof system, a ~~of a building at a known location;~~

~~entering the~~ location of ~~a~~ the building ~~with a roof that needs a roof measurement~~;

~~obtaining aerial image files of said roof of the building at said location; using said~~ determining by a calibration module ~~to determine the~~ of the roof computer system, measurements of the roof including size, geometry and pitch of ~~each said~~ roof ~~section~~ sections of the building using aerial image files of said roof of the building at said location; and

~~outputting~~ generating, by the roof computer system, a roof ~~estimate~~ report based on the determined measurements; and

outputting the generated roof report.

19. (Currently Amended) The method of claim 18, wherein ~~submitting~~ receiving the request for the measurement includes receiving the request from at least one of: a building tenant, a building owner, a roofing contractor, a solar panel installation company, a gutter ~~insulation~~ installation company, ~~a~~ an HVAC company, and an insurance company.

20. (Canceled)

21. (Previously Presented) The method of claim 20 wherein generating the roof estimate report includes generating a line drawing of the roof labeled with at least one of the determined measurements.

22. (Previously Presented) The method of claim 20 wherein the roof estimate report includes at least one of the aerial images.

23. (Currently Amended) The method of claim 18 wherein determining the measurements of the roof includes constructing, based on the aerial images, a three-dimensional geometry of the roof.

24. (Currently Amended) The method of claim 23 wherein constructing the three-dimensional geometry of the roof includes co-registering, based on a set of reference points, at least two of the aerial images.

25. (Currently Amended) The method of claim 18 wherein determining the measurements of the roof includes determining linear measurements of the roof sections ~~of said roof~~.

26. (Currently Amended) The method of claim 18 wherein determining the measurements of the roof includes identifying ridges ~~and/~~or valleys of said roof.

27. (Previously Presented) The method of claim 18 wherein receiving the request for the measurement of the roof includes receiving, from a customer, an address of said building.

28. (Currently Amended) The method of claim 18 ~~wherein~~ further comprising obtaining the aerial images of said roof includes ~~receiving the aerial images~~ from an aerial image database.

29. (Currently Amended) A method for determining measurements of a roof, comprising:

under control of a roof estimation computer system:

receiving a request for measuring a roof of a building, the request including location information for the building, the roof including a plurality of sections;

obtaining, based on the location information, aerial images of the roof of the building; and

determining, based on the obtained aerial images, the measurements of the roof, the measurements including an area and a pitch of each of the plurality of sections of the roof.

30. (Currently Amended) ~~The method of claim 29, further comprising~~ A method for determining measurements of a roof, comprising:

under control of a roof estimation computer system:

receiving a request for measuring a roof of a building, the request including location information for the building, the roof including a plurality of sections;

obtaining, based on the location information, aerial images of the roof of the building;

determining, based on the obtained aerial images, the measurements of the roof, the measurements including an area and a pitch of each of the plurality of sections of the roof; and

producing a roof estimate report based on the determined measurements of the roof~~, the roof estimate report including at least one of the aerial images~~.

31. (Previously Presented) The method of claim 30 wherein the roof estimate report includes a line drawing of the roof labeled with at least one of the determined measurements.

32. (Currently Amended) The method of claim 29 wherein determining the measurements of the roof includes constructing, based on the aerial images, a three-dimensional geometry of the roof.

33. (Previously Presented) The method of claim 32 wherein constructing the three-dimensional geometry of the roof includes co-registering, based on a set of reference points, the aerial images.

34. (Previously Presented) The method of claim 29 wherein obtaining the aerial images of the roof includes receiving the aerial images from an aerial image database.

35. (Currently Amended) A system for remotely determining measurements of a roof, the system comprising:

a computer including a display and ~~working~~ a non-transitory memory; and

a roof estimating software program stored in the ~~working~~ a non-transitory memory and operable to:

receive location information of a building in the selected region;

present on the display aerial images showing the roof sections of said building and showing measurements of the roof;

determine, based on said aerial images, the measurements of the roof including size, geometry, and pitch of the roof sections of said building; and

output a report including the determined measurements ~~and at least one of said aerial images~~.

36. (Previously Presented) The system of claim 35 further comprising an aerial image file database that includes the presented aerial images.

37. (Currently Amended) A method for determining measurements of a roof, comprising:

under control of a roof estimation computer system:

receiving a request for measuring a roof of a building, the request including location information for the building, the roof including a plurality of sections;

receiving aerial images of the roof of the building from a remote aerial image database, the receiving based on the location information for the building;

determining, based on the received aerial images, the measurements of the roof, the measurements including an area and a pitch of each of the plurality of sections of the roof;

identifying, based on the received aerial images, ridges of the roof; and

outputting a roof estimate report based on the determined measurements of the roof, the roof estimate report including ~~at least one of the aerial images, at least one line drawing of the roof, an indication of the identified ridges of the roof, and~~ at least some of the determined measurements.

38. (Previously Presented) The method of 37 wherein determining the measurements of the roof includes constructing, based on the aerial images, a three-dimensional geometry of the roof.

39. (Previously Presented) The method of claim 39 wherein constructing the three-dimensional geometry of the roof includes co-registering, based on a set of reference points, the aerial images.

40. (Currently Amended) The method of claim 37, wherein receiving the request for measuring the roof includes receiving the request from at least one of: a building tenant, a building owner, a roofing contractor, a solar panel installation company, a gutter ~~insulation~~ installation company, ~~a~~ an HVAC company, and an insurance company.

41. (New) A method for providing a roof report comprising, under control of a computer system:

receiving aerial images of a roof having a plurality of sections;

determining roof pitch measurements by constructing a three dimensional geometry of the roof based on the received aerial images;

generating a first image of the roof showing a plan view of the roof, the generated image including a first set of lines representing the sections of the roof on the first generated image;

indicating the roof pitch measurements on the first generated image, said roof pitch measurements determined by the reconstructed three dimensional geometry and said roof pitch measurements showing a pitch of at least one of the sections within a section of the roof having the pitch; and

outputting a roof report including the first generated image.

42. (New) The method of claim 41 wherein said roof pitch measurements show, within each section, a pitch of the section.

43. (New) The method of claim 41 further comprising:

indicating roof area measurements on the roof report, said roof area measurements determined by the reconstructed three dimensional geometry and showing an area of at least one of the sections within a section of the roof having the area.

44. (New) The method of claim 41 further comprising:

indicating roof area measurements on the roof report, said roof area measurements determined by the reconstructed three dimensional geometry and showing, within each section, an area of the section.

45. (New) The method of claim 44 wherein the indicating roof area measurements on the roof report comprises indicating roof area measurements on the roof report

on a second generated image of the roof included in the roof report different than the first generated image.

46. (New) The method of claim 45 wherein the indicating roof area measurements on the roof report on a second generated image of the roof included in the roof report different than the first generated image comprises:

generating the second image of the roof showing a plan view of the roof, the generated second image including a second set of lines representing the sections of the roof on the second generated image; and

indicating roof area measurements on the second generated image, said roof area measurements determined by the reconstructed three dimensional geometry and showing an area of at least one of the sections within a section of the roof having the area, and wherein the outputted roof report includes the first and second generated images.

47. (New) The method of claim 41 further comprising:

indicating roof dimension measurements on the roof report, said roof dimension measurements determined by the reconstructed three dimensional geometry and showing an approximate actual length of a sloped edge of a roof section proximate to a line of the first set of lines, said line representing the sloped edge.

48. (New) The method of claim 41 further comprising:

indicating roof dimension measurements on the roof report, said roof dimension measurements determined by the reconstructed three dimensional geometry and showing, proximate to each line of the first set of lines, a dimension of a roof section represented by the line.

49. (New) The method of claim 48 wherein the indicating roof dimension measurements on the roof report comprises indicating roof dimension measurements on the roof

report on a second generated image of the roof included in the roof report different than the first generated image.

50. (New) The method of claim 49 wherein the indicating roof dimension measurements on the roof report on a second generated image of the roof included in the roof report different than the first generated image comprises:

generating the second image of the roof showing a plan view of the roof, the generated second image including a second set of lines representing the sections of the roof on the second generated image; and

indicating roof dimension measurements on the second generated image, said roof dimension measurements determined by the reconstructed three dimensional geometry and showing an approximate actual length of a sloped edge of a roof section proximate to a line of the second set of lines, said line representing the sloped edge, and wherein the outputted roof report includes the first and second generated images.

51. (New) The method of claim 41 wherein the generated first image of the roof is a line drawing.

52. (New) A method for providing a roof report comprising, under control of a computer system:

receiving aerial images of a roof having a plurality of sections;

determining roof area measurements by constructing a three dimensional geometry of the roof based on the received aerial images;

generating a first image of the roof showing a plan view of the roof, the generated image including a first set of lines representing the sections of the roof on the first generated image;

indicating the roof area measurements on the first generated image, said roof area measurements determined by the reconstructed three dimensional geometry and said roof area

measurements showing an area of at least one of the sections within a section of the roof having the area; and

outputting a roof report including the generated first image.

53. (New) The method of claim 52 further comprising:

indicating roof dimension measurements on the roof report, said roof dimension measurements determined by the reconstructed three dimensional geometry and showing, proximate to each line of the first set of lines, a dimension of a roof section represented by the line.

54. (New) The method of claim 53 wherein the indicating roof dimension measurements on the roof report comprises indicating roof dimension measurements on the roof report on a second generated image of the roof included in the roof report different than the first generated image.

55. (New) The method of claim 52 wherein the generated first image of the roof is a line drawing.

56. (New) A method for providing a roof report comprising, under control of a computer system:

receiving aerial images of a roof having a plurality of sections;

determining roof pitch measurements, roof area measurements and roof dimension measurements by constructing a three dimensional geometry of the roof based on the received aerial images;

generating a first, second and third image of the roof, the generated images each showing a plan view of the roof, and each including a set of lines representing the sections of the roof;

indicating the roof pitch measurements on the first image, said roof pitch measurements determined by the reconstructed three dimensional geometry and said roof pitch

measurements showing a pitch of at least one of the sections within a section of the roof having the pitch;

indicating roof area measurements on the second image, said roof area measurements determined by the reconstructed three dimensional geometry and showing an area of at least one of the sections within a section of the roof having the area;

indicating roof dimension measurements on the third image, said roof dimension measurements determined by the reconstructed three dimensional geometry and showing an approximate actual length of a sloped edge of a roof section proximate to a line of the set of lines included on the third image, said line representing the sloped edge; and

outputting a roof report including the first second and third images.

57. (New) The method of claim 56 wherein said roof pitch measurements show, within each of the sections of the roof shown on the first image, a pitch of the section, wherein said roof area measurements show, within each of the sections of the roof shown on the second image, an area of the section, and wherein said roof dimension measurements show, proximate to each line of the set of lines included on the third image, a dimension of a roof section represented by the line.

58. (New) The method of claim 57 wherein the first, second and third images of the roof are line drawings.

59. (New) A system for providing a roof report comprising, comprising:

a computer including a processor; and

a non-transitory memory operably coupled to the processor, the non-transitory memory having computer executable instructions stored thereon that, when executed by the processor, cause the processor to:

receive aerial images of a roof having a plurality of sections;

determine roof pitch measurements, roof area measurements and roof dimension measurements with the computer and processor based on the received aerial images;

generate at least one image of the roof, the image showing a line drawing plan view of the roof, and the plurality of the sections of the roof;

indicate the roof pitch measurements on the first image, said roof pitch measurements determined by the reconstructed three dimensional geometry and said roof pitch measurements showing a pitch of at least one of the sections within a section of the roof having the pitch;

indicate roof area measurements on the second image, said roof area measurements determined by the reconstructed three dimensional geometry and showing an area of at least one of the sections within a section of the roof having the area;

indicate roof dimension measurements on the third image, said roof dimension measurements determined by the reconstructed three dimensional geometry and showing an approximate actual length of a sloped edge of a roof section proximate to a line of the set of lines included on the third image, said line representing the sloped edge; and

output a roof report including the first, second and third images.

60. (New) The system of claim 59 wherein said roof pitch measurements show, within each of the sections of the roof shown on the first image, a pitch of the section, wherein said roof area measurements show, within each of the sections of the roof shown on the second image, an area of the section, and wherein said roof dimension measurements show, proximate to each line of the set of lines included on the third image, a dimension of a roof section represented by the line.

61. (New) The system of claim 60 wherein the first, second and third images of the roof are line drawings.

Amendments to the Drawings:

The attached sheets of drawings include changes to Figures 1 through 5F. These sheets, which include Figures 1 through 5F, replace the original sheets including Figures 1 through 5F.

Attachments: 9 Replacement Sheets

REMARKS

Claims 1, 4, 5, 8, 10, 14-19, 21-40 and 41-61 will be pending upon entry of the present amendment. Claims 1, 4, 5, 8, 10, 14-19, 23-25, 26, 28, 29, 32, 35, 37 and 40 are amended herein. Claim 20 is canceled herein. Claims 41-61 are new. No new matter is being presented by way of this amendment.

At the outset, Applicants submit many of the rejections made by the Examiner rely upon pages of the precigeo.com reference bearing alleged publication dates of October 26, 2007. The present application has a priority date of April 17, 2007. It is clear that any document published after April 17, 2007 is not prior art. Thus, pages 6-11 of the precigeo.com reference can be immediately set aside as not prior art. Any claim rejected using material from these pages should therefore be allowed immediately. Claims 10, 16, 17, 20, 30, 35, and 37-40 were rejected using material from the precigeo.com reference bearing an alleged publication date after Applicants' filing date. Of these, claims 10, 16, 17, and 30 have been rewritten as independent claims, claim 20 has been incorporated into claim 18 and claim 20 has been canceled. Claims 35 and 37 already were independent claims. Claims 38-40 depend from independent claim 37. Therefore, it is respectfully requested that claims 10, 16, 17, 18, 30, 35, and 37-40 be allowed immediately.

A. Objections to the Drawings

The Examiner has objected to the drawings due to various informalities. The informalities have been addressed by the amendments herein to the drawings and specification. Additionally, the drawing shave been amended to correct the reference numerals of Figures 5C-5F and add some reference numerals to Figures 5C-5E. Therefore, withdrawal of the objections is respectfully requested.

B. Objections to the Specification

The Examiner has objected to the specification due to various informalities. The informalities have been addressed by the amendments herein to the specification. The

specification has also been amended to correct other informalities. Therefore, withdrawal of the objections is respectfully requested.

C. Objections to the Claims

Claims 8, 19, and 40 were objected due to various informalities. The informalities have been addressed by the amendments to the applicable claims herein. Therefore, withdrawal of the objections is respectfully requested.

D. Rejections to the Claims under 35 U.S.C. § 112

Claim 26 was rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claim 26 has been amended herein to address the rejection. Therefore, withdrawal of the rejection is respectfully requested.

E. Rejections to the Claims under 35 U.S.C. § 101

Claims 1, 4, 5, 8, 10, 14-17, 35, and 36 were rejected under 35 U.S.C. § 101 because the claimed invention is allegedly directed to non-statutory subject matter. Amendments to the applicable claims have been made herein to include the "non-transitory" language and inserting "computer" before "system" as suggested by the Examiner to address the rejection. Therefore, withdrawal of the rejection is respectfully requested.

F. Rejections to the Claims under 35 U.S.C. § 103(a)

Claims 1, 4, 5, 8, 10, 14-17, 35, and 36 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubo (US PGP 2006/0265287 A1) in view of reference U in the form PTO-892 submitted by the Examiner with this office action. The new reference U is a combination of a number of documents. It includes as its first five pages document DH from the information disclosure statement dated 26 February 2010 (pp. 1-5), the next three pages include a new download done by the Examiner: "How precigeoRisk Works" (pp. 6-9), and the last two pages include "Welcome to precigeoRisk" (pp. 10-11). These three different web downloads

were obtained at different times from the web site titled: Wayback Machine (http://www.archive.org/web/web.php) in which a search was done for the URL www.pricegeo.com. This new document will be referred to herein as "precigeo.com" to be consistent with the Examiner's reference in the office action. Claims 18-34 and 37-40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over precigeo.com in view of Kubo.

Regarding independent claims 1, 18, 29, 35 and 37, the Examiner relies on the Kubo reference as disclosing "a computer including an input means, a display means and working memory," a "roof estimating software program stored in the working memory," and a method "under control of a roof estimation system," but admits the Kubo reference does not disclose the rest of the elements. The Examiner relies on the precigeo.com reference as disclosing the rest of the elements of these claims. Applicants believe that much, if not all of the reference titled "precigeo.com" is not prior art under 35 U.S.C. § 102, as will now be explained.

1. Content and Date of the Precigeo.com Reference

In the form PTO-892, the Examiner gave the date of reference U, "precigeo.com," as being December 12, 2006. Applicants do not believe this is the correct date for any page of this reference. At the bottom of each page printed from this archive web site is the URL that provides information regarding the date the Wayback Machine obtained that particular archived page. Viewing Page 1 of the reference DH, the URL at the bottom line reads: http://web.archive.org/web/20061216205419/http://www.precigeo.com/. This indicates that the date of this page from the archive is 12/16/2006, or December 16, 2006. Page 2 of the archived precigeo.com has the same date. However, pages 3-5 have a new, later date, which is 2007/01/07, or January 7, 2007. Pages 6-11 have yet a new, later date of 2007/10/26 or October 26, 2007. Thus, while the first two pages, as printed, bear a date in 2006, it is clear that the later pages have dates in 2007. This creates great confusion as to the date that any of these pages were available to the public.

Applicants note that the Examiner listed December 12, 2006 as the date of reference U, precigeo.com. There does not appear to be any reason for this date. The earliest date on the reference itself is December 16, 2006. Therefore, Applicants will consider this the

earliest possible date. If the Examiner is able to show a valid date of precigeo.com of December 12, 2006, then Applicants will address that date.

Applicants also point out that the Examiner relied on material that was actually not present in the reference and made assumptions regarding what the missing material showed. For example, in rejecting claims 21, 22, 25, and 31 the Examiner referred to links with the names such as: "Roof 1-Face Schematic" but none of the linked pages were provided. Applicants' attorney attempted to obtain these pages, but could not do so. It is therefore likely that these pages do not exist. Certainly, the content of the pages is not known. The Examiner may be guessing at the content of these missing pages using Applicants' own disclosure regarding what a roof diagram looks like, however, this is impermissible hindsight. The Examiner may not use Applicants' own disclosure to extrapolate and assume the content of the prior art and what it might show. Therefore, claims 21, 22, 25 and 31 should also be allowable.

Of some importance, the dates contained on the bottom of the pages by the Wayback Machine web site are not reliable. The date at the bottom of each page of the precigeo.com reference cannot be relied upon as the actual date that the content shown on the page existed on the precigeo.com web site. Applicants' attorney, in preparing this response, visited the Wayback Machine web site at http://web.archive.org/web/20061216205419/http://www.precigeo.com/ to view the same "archived" web pages cited by the Examiner that purportedly shows the precigeo.com web page as it existed on December 16, 2006. Upon visiting the first page, Applicants' attorney noted that the page had changed from when it was previously displayed. Attached as Exhibit 2 is a screen shot of this page as recently viewed. In particular, this page is not the same "archived" web page provided by the Examiner. This is evidenced by the fact that appearing in the upper right hand corner is new box, with new text stating "*Solar Power 10 Exhibition in October 2010"* (referenced here: http://www.solarpowerinternational.com/sepa2010/public/enter.aspx), which was clearly not part of the precigeo.com web page as it existed in 2006. Thus, even though this page contains the date of 12/16/2006 in the Wayback Machine URL at the top thereof, it is clear that the page has been modified by the addition of this ad. On a later date, Applicants' attorney visited the very same archived web site via the Wayback machine and found the page altered yet

again; this time the added text had the phrase: "Coming Soon precigoSolar Layout Tool," attached hereto as Exhibit 3. Yet, this page bears the very same date at the bottom, December 16, 2006. It thus appears that precigeo or some other company has the ability to go back into the archive pages of the Wayback machine and add text. The pages of the Wayback Machine web site clearly contain elements that are newer than the archival date reported by Wayback Machine.

Applicants' attorney has investigated how this could happen and was told the following. These newer elements appear because the pages are archived using a cascading style sheet (CSS) file referenced in the html source of the archived web page. It pulls in elements at the time of rendering of the web page that are newer than the archive date. Upon further review, it was found that the new element in each of the two cases was inserted into the archive from the *current* precigeo.com web site by way of a reference in the archived CSS page from 2006. Thus, the resulting "archived" page is a combination of elements from the older archive and elements from current 2010 precigeo page. This does not appear to be related to the use of any frames within the web page. Given that the web page provided by the Wayback Machine is obviously not a true replication of the site as it existed on the purported archival date, it calls into question what other aspects of the "archived" page are accurate as of the purported archival date. Thus, the precigeo.com reference does not have a date that can be relied upon to indicate that it is prior art for at least the reasons presented above.

Furthermore, there are links in the menu bar of the Wayback Machine "archival" of the precigeo.com web pages that output pages that are newer than the calling pages, which in turn, have links to even newer pages. Thus, it seems that the links cannot be relied upon as being the same ones that were present when the web site was first available to the public. Thus, the content of the link at the date shown is not known. Alternatively, unless the precigeo.com web site had a number of dead links in the menu bar at the time of archival that were to be filled in over time, it appears that either the links were added or there is some mechanism by which the rendering of the table information containing those links could be compromised in such a way that *newer* content could be rendered into an older table.

As additional evidence of the unreliability of dates given by Wayback Machine to various pages of the "archived" precigeo.com web site, when visiting the purportedly archived

web page of the precigeo.com web site dated January 2008, the timing of the content is inconsistent with earlier "archived" content. For example, a page of the precigeo.com January, 2008 archive http://web.archive.org/web/20080110074814/http://www.precigeo.com/ shown in a screenshot attached hereto as Exhibit 4 states "Update: Roof/lawn/solar measurements will be available as a web-based service in early 2008. Users will be able to sign-up, submit addresses for measurement and review/download completed results - all online!" This is a forward looking statement that indicates precigeo.com hopes to offer a roof measurement service in which the user can input the address "on-line" sometime in early *2008*. This is inconsistent with the timeline established in the various purportedly earlier archived pages from 2006 and 2007 in the precigeo.com reference provided by the Examiner. For example, the purportedly older archived pages of the precigeo.com reference including the "precigeo roof" section on page 2 of the precigeo.com reference in which the user can "login" and then starting "downloading or 'typing-in' the street address(es)"; the explanation of the service (e.g. on the "how it works" page shown on page 4 of the precigeo.com reference), and the login/new user elements on page 1 of the precigeo.com reference appear inconsistent with the timeline in that they imply that such a service was already in existence. Thus, links to newer content might have somehow been injected into the older archive.

These changes are not surprising given the statement on the Wayback Machine web site itself. The Wayback Machine does not represent in any way that their records are accurate, current, complete, error free, that any defects will be corrected, or in fact, that access to the collections meets any requirements at all. In particular, the Internet Archive terms of use at (http://www.archive.org/about/terms.php) state (emphasis added):

> You understand and agree that the Archive *makes no warranty or representation* regarding the *accuracy, currency, completeness, reliability, or usefulness* of the content in the Collections, that the Site or the Collections will meet your requirements, that access to the Collections will be uninterrupted, timely, secure, *or error free, or that defects, if any, will be corrected*. We make no warranty of any kind, either express or implied.

Thus, as shown above, due to the fact that at least page 1 of the precigeo.com reference provided by the Wayback Machine has changed three times in this year and is not a true replication of the page as it existed on the purported archival date, and for at least the

additional reasons provided above showing the inaccuracy and unreliability of the dates provided by the Wayback Machine, Applicants submit the dates provided by the Wayback Machine web site at the bottom of each page of the precigeo.com reference cannot be relied upon as the actual date that the content shown on the page existed on the precigeo.com web site. Therefore, the precigeo.com reference as obtained from the Wayback Machine does not have a date that can be relied upon to indicate that it is prior art.

While some of the material on the archive pages might have existed as early as Dec, 16, 2006, it is clear that some of the material did not exist until 2007 and much of it did not exist until after Applicants' filing date. The U.S. Patent Office needs to show the date and content of prior art that is relied upon in making a rejection. Clearly, neither the date nor the content of the precigeo.com reference have been shown with sufficient support that they can be relied upon. The precigeo.com reference should therefore be removed as prior art for this reason alone.

Applicants' attorney submitted these documents to comply with their duty of disclosure, but as stated in the IDS when filed on Feb. 26, 2010, such listing is not an admission that the documents are prior art. It is particularly an issue in the present case in which one reference has had pages added which bear a date after Applicants' filing date and which do not constitute prior art by any possible measure.

2. <u>Proposal for Proceeding in Light of Unknown Prior Art Dates</u>

Because the date of the precigeo.com reference cannot truly be known with any reliability, Applicants propose to proceed under the following procedure.

First, those claims which were rejected on prior art that bears an earliest possible publication date of Oct. 26, 2007 should be allowable. These were claims 10, 16, 17, 18, 30, 35, and 37-40. Of these, claims 10, 16, 17, and 30 have been rewritten as independent claims, claim 35 is already an independent claim, claim 20 has been incorporated into claim 18 and then canceled, and claims 38-40 depend form independent claim 37. Therefore, it is requested that claims 10, 16, 17, 18, 30, 35, and 37-40 be allowed immediately.

Second, Applicants submit some of the current claims, along with new claims 41-61 submitted herewith are fully allowable over the precigeo.com document even if it is prior art. Namely, Applicants' will assume that the entire precigeo.com reference, even those pages dated on October 26, 2007, all bear a publication date of December 16, 2006, as asserted by the Examiner. Applicants will show that claims 24, 33, 39 and new claims 41-61 are patentable over this reference even if it is fully prior art in all respects.

Third, Applicants will show that the invention was conceived prior to the earliest possible date of the precigeo.com reference and due diligence was exercised from before the earliest possible date of precigeo.com reference until the claimed embodiments were reduced to practice either actually or constructively by the filing of U.S. Provisional Patent Application No. 60/925,072 on April 17, 2007, to which the Application claims the benefit under 35 U.S.C. § 1.119(e).

Applicants' have already completed the explanation of the first step as set out above and will therefore proceed with alternative steps two and three, in that sequence as will now be explained.

3. Claims 24, 33, 39 and new claims 41-61 are allowable even if the entire precigeo.com reference constitutes prior art under 102(a).

For this section F.3 only of the response, Applicants will accept that the dates of the precigeo.com reference are all prior to applicants' invention. This is not an admission that the precigeo.com reference is prior art, but for the purpose of a advancing prosecution of claims 24, 33, 39 and 41-61. Applicants will assume that with respect to those claims, it is prior in time and qualifies as prior art. Even if precigeo.com is prior art, claims 24, 33, 39 and 41-61 are still patentable as will now be shown.

Regarding claims 24, 33 and 39, the Examiner cites page 4 of the precigeo.com reference as disclosing the element "wherein constructing the three-dimensional geometry of the roof includes co-registering, based on a set of reference points, the aerial images." Applicants respectfully disagree. Regardless of the unreliability of dates given by Wayback Machine to

pages of the "archived" web sites as established herein, the precigeo.com reference does not disclose this element. The second paragraph on page 2 of the precigeo.com reference states:

> precigeoRoof is easy to use. Start by registering on the precigeo home page. Once you've registered, login and start a "roof-measuring job". For the most part, this involves downloading or "typing in" the street address(es) of the roof(s) to be measured.

As shown in the quote above, the paragraph refers to a user registering (i.e., joining) a web site, which has nothing to do with "co-registering, based on a set of reference points, the aerial images". In fact, the paragraph above does not mention anything about reference points. It appears the Examiner is erroneously interpreting the co-registering of aerial images to mean user registration on a web site.

Regarding new claims 41-61, Applicants submit the precigeo.com reference and Kubo combined do not teach or suggest all the elements of any one of claims 41-61. For example, the elements regarding determining measurements by constructing a three dimensional geometry of the roof based on the received aerial images is not taught or suggested by the precigeo.com reference or the Kubo reference as shown above. These, and other features of claims 41-61 are not found in the prior art. Nor does the combination of Kubo and precigeo.com show placing the various determined measurements, such as pitch, area and size, on an image of the roof. One example of placing the determined data on an image of the roof is shown in Figures 5C-5F. In these Figures, a line drawing of a roof is provided and on the line drawing itself, the pitch of each section, is written (see Figure 5D) or the area for each section is written (see Figure 5E). Thus, claims 41-49 which variously claim showing the pitch or the area on the generate image are clearly not found in any prior art. Placing the determined data right on the image is of significant benefit to a person repairing the roof or calculating the cost of materials for repair of the roof.

Therefore, even if the precigeo.com reference was prior art, at least claims 24, 33, 39 and new claims 41-61 are nonobvious for the novel and nonobvious features claimed therein which are not taught or suggested by the precigeo.com reference or the Kubo reference as shown above.

4. The precigeo.com reference does not constitute prior art under 102(a) for additional reasons

For this section, F.4. Applicants will swear behind the precigeo.com reference for claims 1, 4,5, 8, 10, 14-23, 25-32, 34-38 and 40. While Applicants may wish, in future situations and different applications to swear behind precigeo.com for all claims at this time, they are not doing so. The current declaration is offered only to swear behind selected claims and not behind all claims. If the Examiner believes the other claims not sworn behind are best pursued in another application he is invited to indicate this in the next office action. Since all the claims are now pending in this case, Applicants elect to make clear that they are swearing behind precigeo.com only for claims 1, 4, 5, 8, 10, 14-23, 25-32, and 34-38 and 40 at this time.

Thus combining the response under section F.3 which showed precigeo.com was not relevant with the response under this section of F.4 showing that the invention date is prior to the earliest possible date of precigeo.com, all grounds of prior art are removed.

The invention was conceived prior to the earliest possible date of the precigeo.com reference and due diligence was exercised from before the earliest possible date of precigeo.com reference until the claimed embodiments were reduced to practice.

Namely, even if the precigeo.com reference does have the alleged date of December 16, 2006, the claimed invention was conceived of prior to December 16, 2006 and due diligence was exercised from before December 16, 2006 until it was reduced to practice.

Attached is a declaration under 37 C.F.R. § 1.13 by Chris Pershing and a reproduction of dated notebook entries including sketches and photographs filed herewith. Therefore, under 35 U.S.C. § 102, the precigeo.com reference is not prior art at least for this additional reason.

The reduction to practice can be either an actual reduction to practice or a constructive reduction. From a review of the attached declaration and the facts set forth therein, it appears to Applicants attorney that there was an actual reduction practice of many of the claims prior to December 16, 2006. Specifically, the facts as set forth show that prior to December 16, 2006, at Chris Pershing, held a meeting with their patent attorney during which he showed the patent attorney 18 detailed pages of notebook entries showing the conception and

carrying out of the invention steps. Whether there was an actual reduction to practice prior to December 16, 2006 or conception followed by meeting with the patent attorney before December 16, 2006 with further and continued work until actual reduction to practice actions or a constructive reduction to practice may be academic. The facts are clear, that prior to December 16, 2006, the patent attorney who wrote the application had been provided with all the materials and details needed to write the application including a list of novel features, (page 11 of Exhibit 1) a summary of the invention (page 10 of Exhibit 1) and a list of potential features for claims (pages 12 and 13).

Since Applicants have sworn behind precigeo.com with respect to claims 1, 4, 5, 8, 10, 14-23, 25-32, 34-38 and 40, the merits of these claims need not be discussed. Of course, many, if not all, of these claims define over precigeo.com, but since it does not qualify as prior art there is no need to discuss these claims and their distinguishing features.

Thus, Applicants respectfully submit that a prima case of obviousness has not been established and all claims should be allowed.

Therefore, withdrawal of the rejections under 35 U.S.C. § 103 is respectfully requested.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable.

Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC

/David V. Carlson/
David V. Carlson
Registration No. 31,153

DVC:ljl

Enclosures:
9 Replacement Sheets of Drawings (Figures 1-5F)
Pershing Declaration
Exhibits 1-4

701 Fifth Avenue, Suite 5400
Seattle, Washington 98104
Phone: (206) 622-4900
Fax: (206) 682-6031

1772753_1.DOC.DOC

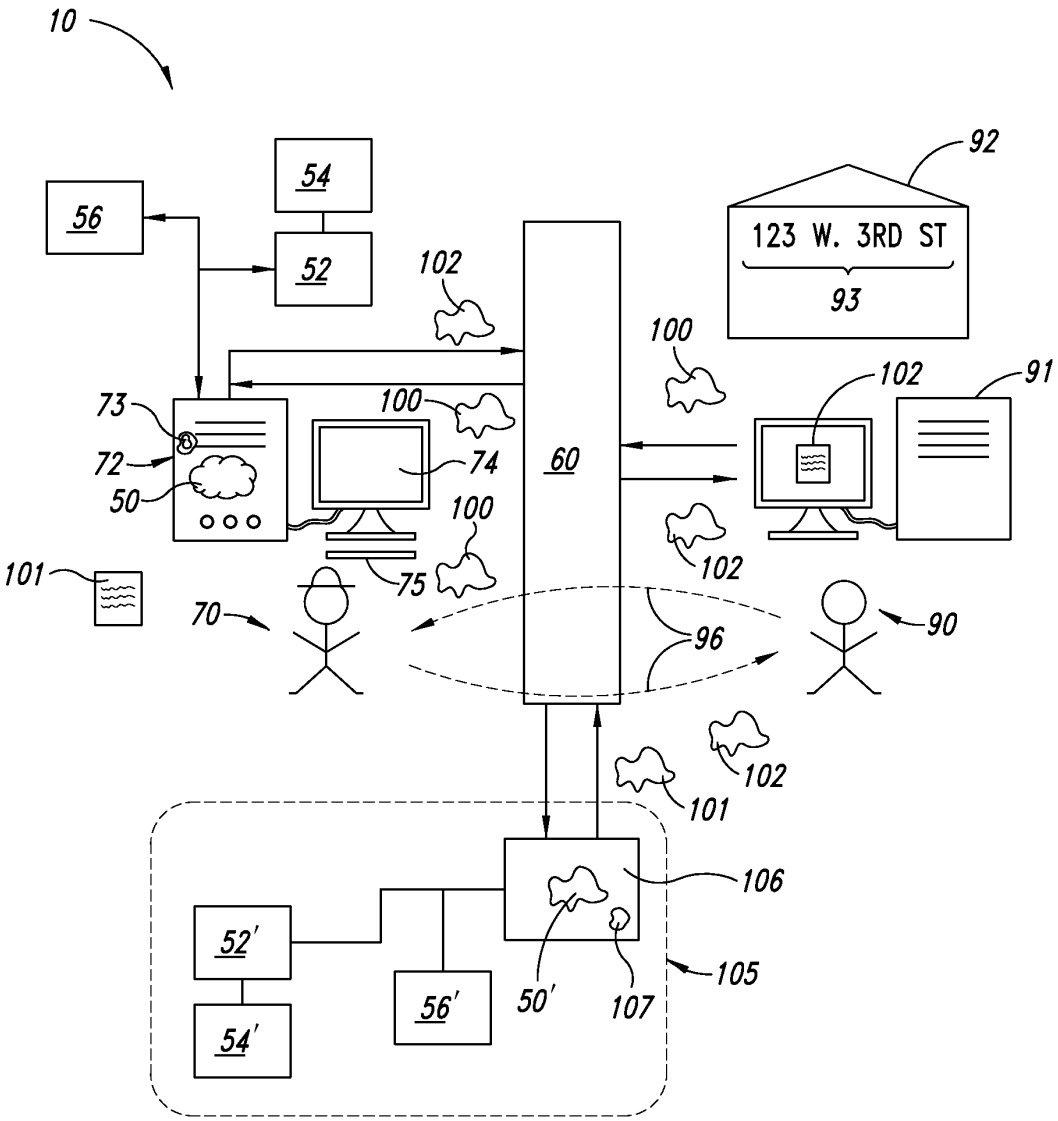

10
54
56
52
102
92
123 W. 3RD ST
93
100
102
91
73
100
72
74
60
50
100
102
101
75
70
96
90
102
101
106
52'
56'
50'
107
105
54'

FIG. 1

A037

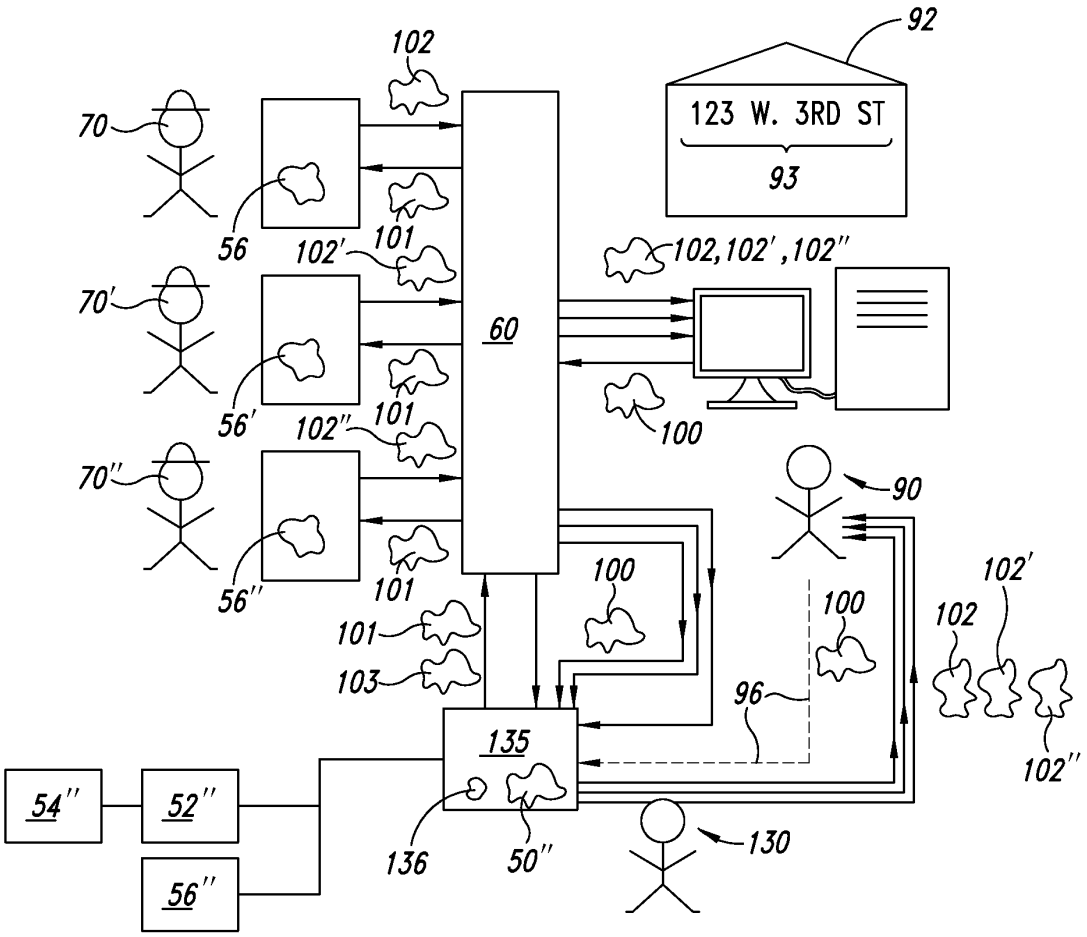

92
123 W. 3RD ST
93
102
70
56
102'
101
102,102',102''
70'
60
56'
102''
101
100
70''
90
56''
101
100
100
102'
102
101
103
96
135
102''
54''
52''
56''
136
50''
130

FIG. 2
A038

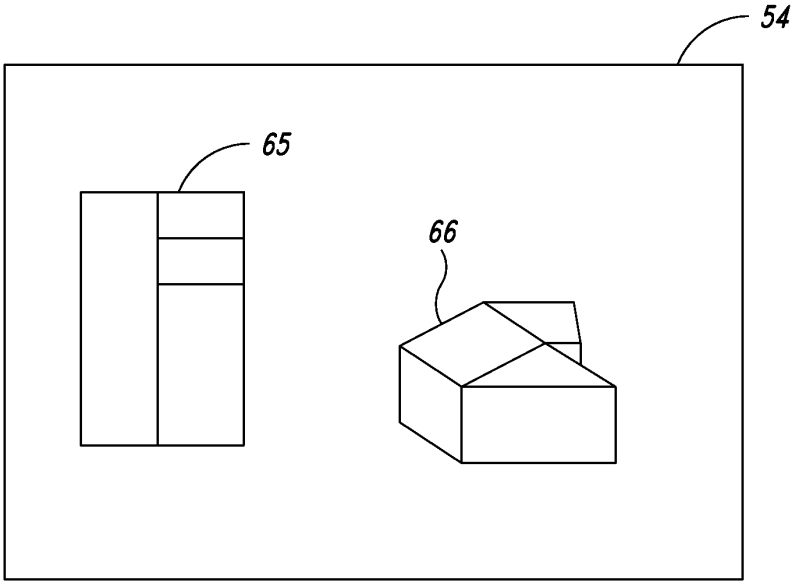


FIG. 3

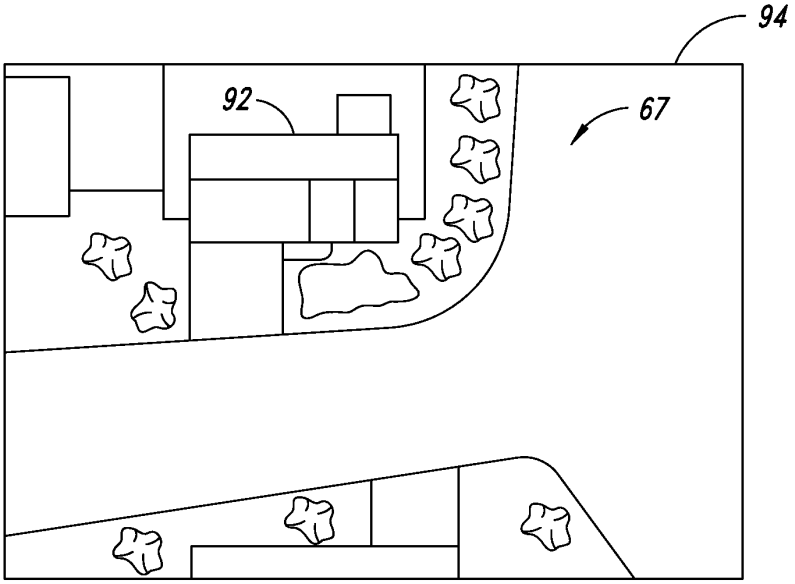


FIG. 4

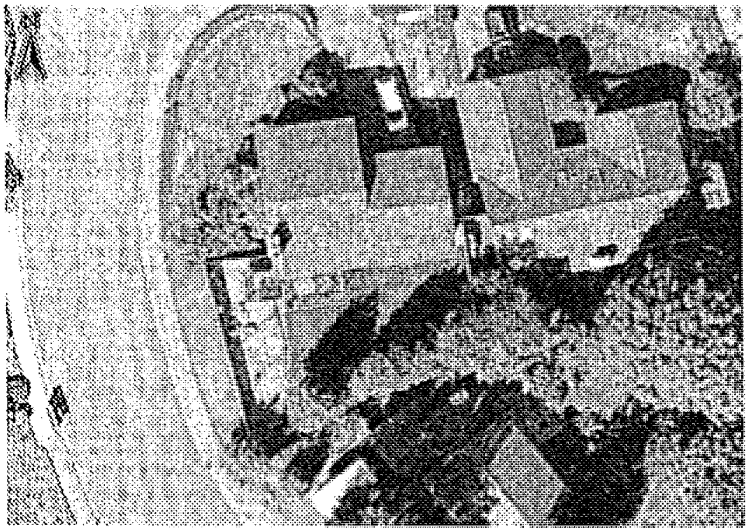
1234 Main Street, Redmond, WA

Order: 2468

<Customer Name Here>

4/16/2008

1234 Main Street, Redmond, WA



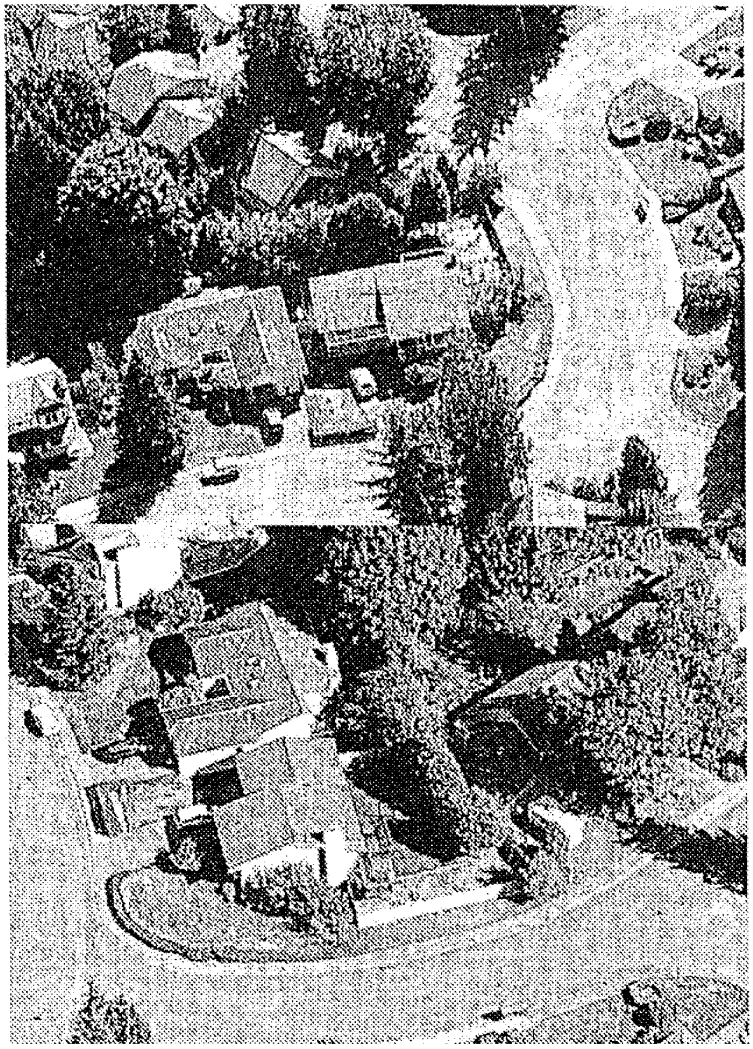
Order: 2468 Copyright © 2008 Eagle View Technologies, Inc. 1 of 6

103

FIG. 5A

1234 Main Street, Redmond, WA

Images:



Order: 2468 Copyright © 2008 Eagle View Technologies, Inc. 2 of 6

104

FIG. 5B

A041

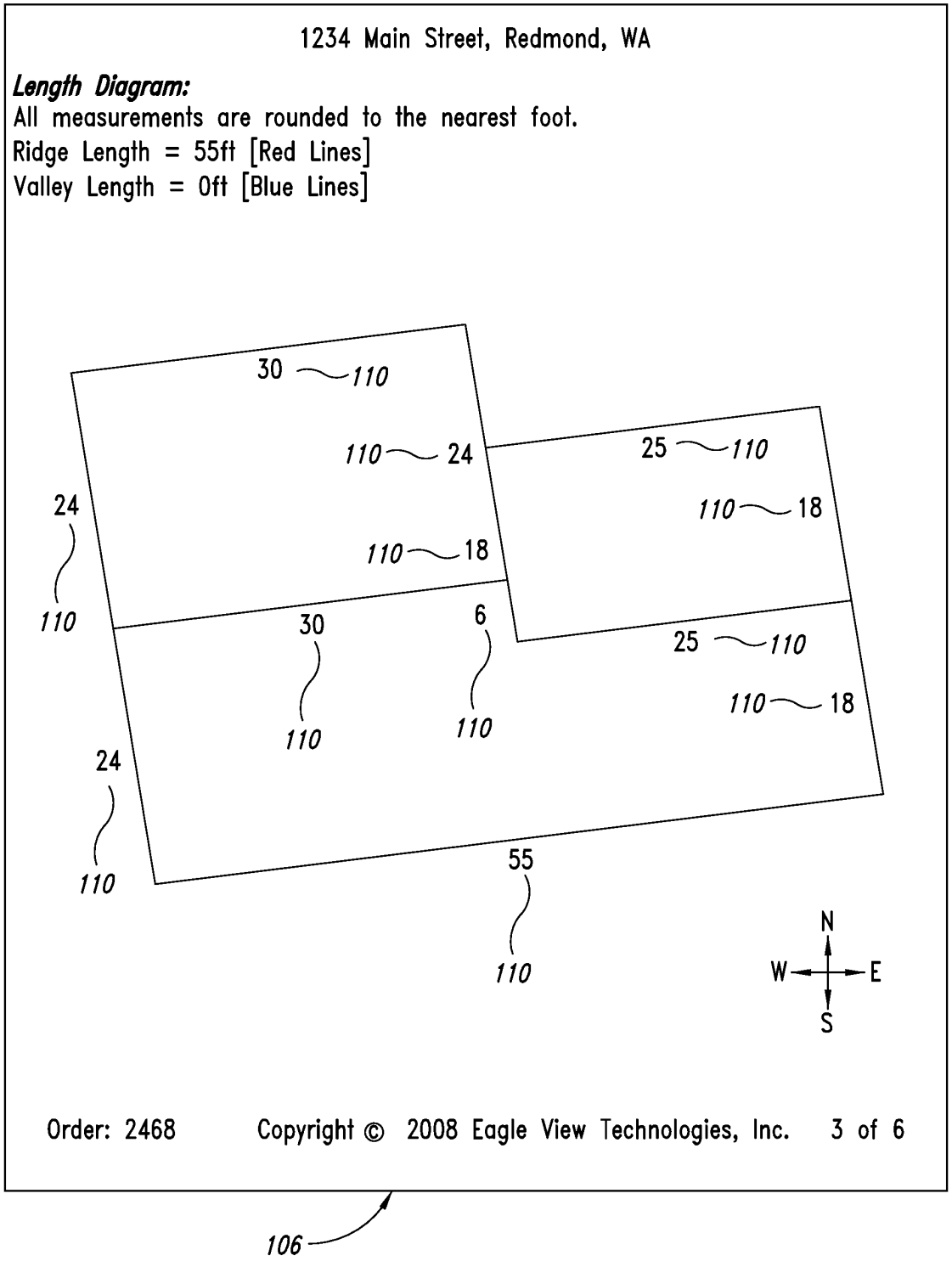

1234 Main Street, Redmond, WA
Length Diagram:
All measurements are rounded to the nearest foot.
Ridge Length = 55ft [Red Lines]
Valley Length = 0ft [Blue Lines]
30
110
110
24
25
110
110
18
24
110
110
18
30
110
6
110
25
110
110
18
24
110
55
110
N
W
E
S
Order: 2468
Copyright © 2008 Eagle View Technologies, Inc.
3 of 6
106

FIG. 5C

A042

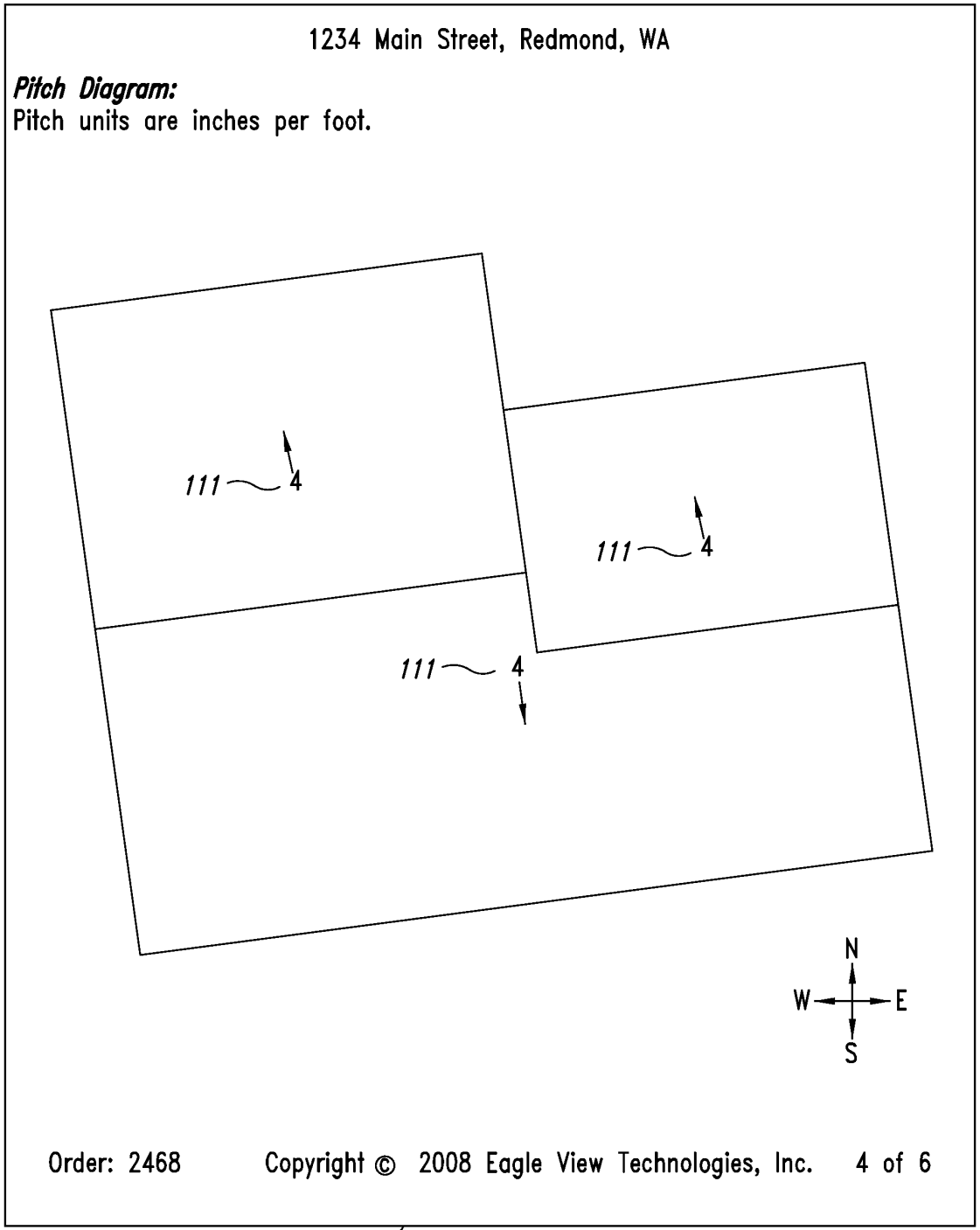

1234 Main Street, Redmond, WA
Pitch Diagram:
Pitch units are inches per foot.
111
4
111
4
111
4
N
W
E
S
Order: 2468
Copyright © 2008 Eagle View Technologies, Inc.
4 of 6
107

FIG. 5D

A043

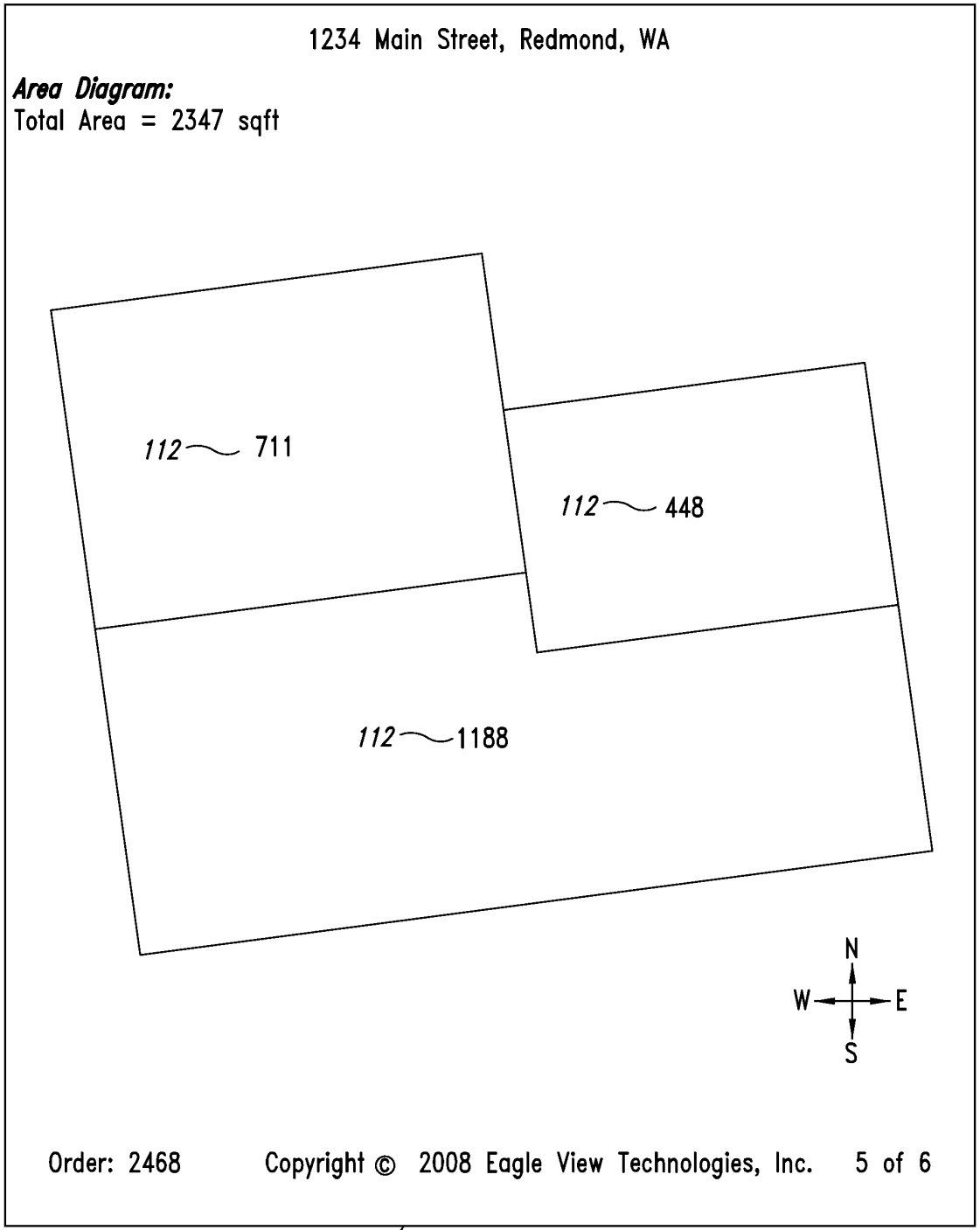

1234 Main Street, Redmond, WA
Area Diagram:
Total Area = 2347 sqft
112 711
112 448
112 1188
N
W
E
S
Order: 2468
Copyright © 2008 Eagle View Technologies, Inc.
5 of 6
108

FIG. 5E

A044

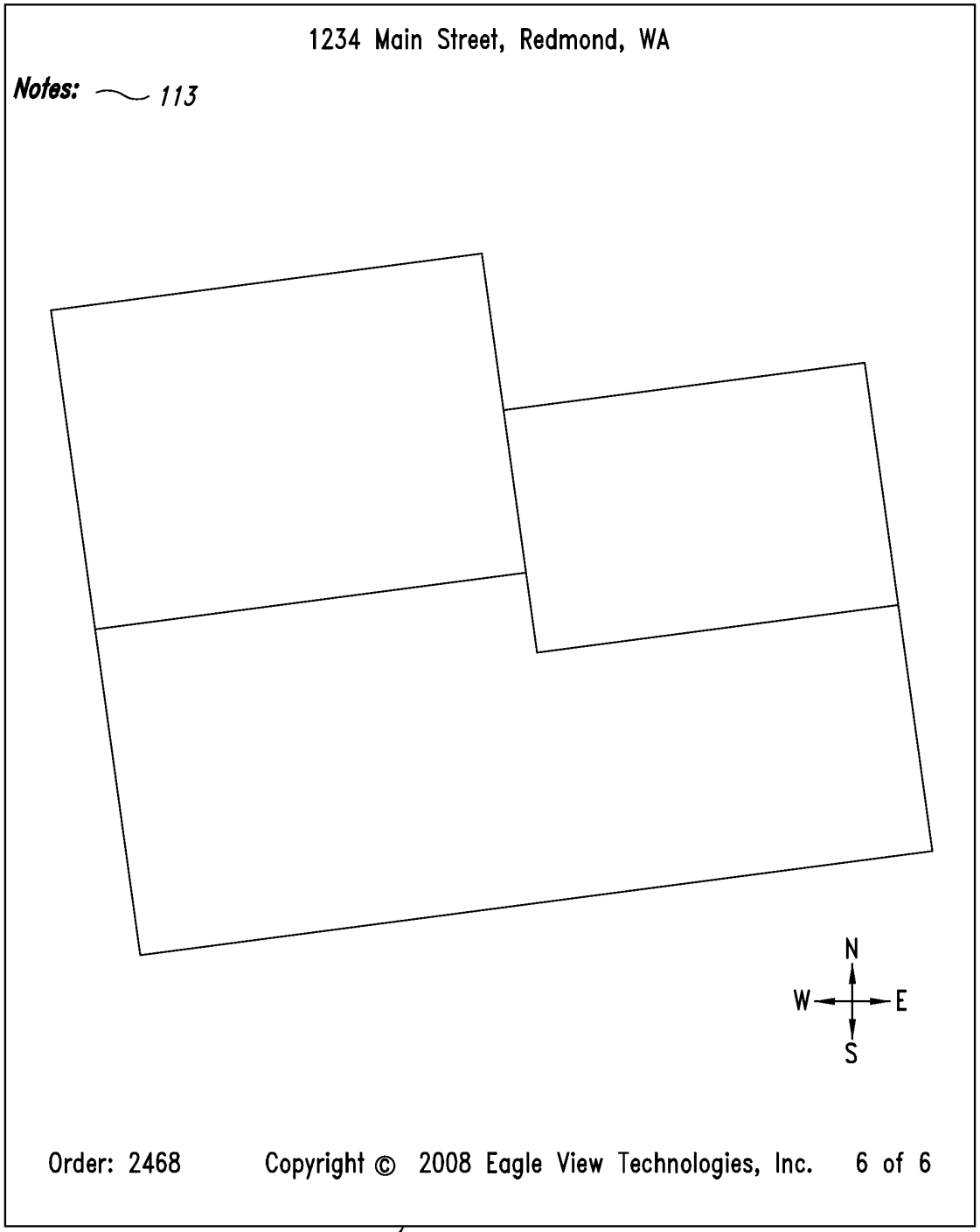

1234 Main Street, Redmond, WA
Notes:
113
N
W
E
S
Order: 2468
Copyright © 2008 Eagle View Technologies, Inc.
6 of 6
109

FIG. 5F

A045

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent	:	8,078,436 B2
Control No.	:	96/000,004
Filed	:	December 28, 2012
For	:	AERIAL ROOF ESTIMATION SYSTEMS AND METHODS
Examiner	:	Jason Scott Proctor
Art Unit	:	3992
Docket No.	:	290115.401C1RE
Date	:	October 25, 2013

Mail Stop *Ex Parte* Reexam
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Commissioner for Patents:

In response to the Office Action dated July 25, 2013, please amend the application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Amendments to the Abstract begin on page 8 of this paper.

Remarks begin on page 9 of this paper.

Amendments to the Claims:

1. (Amended) A computing system for generating a roof estimate report, the computing system comprising:

a memory;

a roof estimation module that is stored on the memory and that is configured, when executed, to:

receive a first and a second aerial image of a building having a roof, each of the aerial images providing a different view of the roof of the building, wherein the first aerial image provides a top plan view of the roof and the second aerial image provides an oblique perspective view of the roof, and are not a stereoscopic pair;

correlate the first aerial image with the second aerial image;

generate, based at least in part on the correlation between the first and second aerial images, a three-dimensional model of the roof that includes a plurality of planar roof sections that each have a corresponding slope, area, and edges; and

generate and transmit a roof estimate report that includes one or more top plan views of the three-dimensional model annotated with numerical values that indicate the corresponding slope, area, and length of edges of at least some of the plurality of planar roof sections using at least two different indicia for different types of roof properties.

18. (Amended) A computer-implemented method for generating a roof estimate, the method comprising:

receiving a first and a second aerial image of a building having a roof, each of the aerial images providing a different view of the roof of the building wherein the first aerial image provides a top plan view of the roof and the second aerial image provides a view of the roof that is other than a top plan view and neither of the two images are part of a stereoscopic pair;

correlating the first aerial image with the second aerial image;

generating, based at least in part on the correlation between the first and second aerial images, a three-dimensional model of the roof that includes a plurality of planar roof sections that each have a corresponding slope, area, and edges; and

transmitting a roof estimate report that includes one or more top plan views of the three-dimensional model annotated with numerical indications of at least one of the slope, area, and lengths of the edges of the plurality of planar roof sections, wherein the roof estimate report includes at least two different indicia for different types of roof properties.

36. (Amended) A non-transitory computer-readable storage medium whose contents, which are computer executable instructions stored on the non-transitory computer-readable storage medium, when executed by a computer processor of a computing system, enable [a] the computing system to generate a roof estimate report for a building having a roof, by [performing] causing, when executed by the computer processor of the computing system, the computing system to perform a method comprising:

receiving [one] two or more images of the building, wherein at least one of the two or more images provides an oblique perspective view of the roof and one of the images provides a top plan view of the roof;

receiving an indication of pairs of points on the two or more images, each pair of points corresponding to substantially the same point on the roof depicted in each of the two or more images;

generating, based on the [one] two or more images of the building, a three-dimensional model of the roof that includes a plurality of planar roof sections that each have a corresponding area and edges, wherein the generating, based on the two or more images of the building, the model of the roof includes generating the model of the roof based on the receiving the indication of the pairs of points on the two or more images of the building; and

transmitting a roof estimate report that includes one or more views of the model, the report being annotated with numerical indications of the area and lengths of the edges of at least some of the plurality of planar roof sections, wherein the roof estimate report includes at least two different indicia for different types of roof properties.

37. (Amended) The non-transitory computer-readable storage medium of claim 36 wherein generating the model of the roof based on the receiving the indication of the pairs of points on the two or more images includes:

correlating two of the two or more images by registering the pairs of points; and

generating [a] the three-dimensional model based on [a] the correlation between the two of the [one] two or more images.

41. (Amended) The non-transitory computer-readable storage medium of claim 36 wherein the contents are instructions that when executed cause the computing system to perform the receiving two or more images step of the method by causing, when executed by the computer processor of the computing system, the computing system to provide access to a repository of aerial images of one or more buildings.

43-45. (Canceled)

57. (New) The method according to 18 wherein the second aerial image provides an oblique perspective view of the roof.

58. (New) A computer-implemented method for generating a roof estimate, the method comprising:

receiving a first aerial image of a building having a type of view of the roof that is a top plan view of the roof;

receiving a second aerial image of the building having a type of view of the roof that is a perspective oblique view of the roof;

receiving a third aerial image having a type of view of the roof that is an oblique perspective from a different direction than the second aerial image, each of the aerial images providing a different view of the roof of the building;

correlating the first aerial image with the second aerial image and third aerial images;

generating, based at least in part on the correlation between the first, second and third aerial images, a three-dimensional model of the roof that includes a plurality of planar roof sections that each have a corresponding slope, area, and edges; and

transmitting a roof estimate report that includes one or more top plan views of the three-dimensional model annotated with numerical indications of at least one of the slope, area, and lengths of the edges of the plurality of planar roof sections, wherein the roof estimate report includes at least two different indicia for different types of roof properties.

59. (New) The method of claim 58 wherein the different types of roof properties include a ridge line and a valley line and the at least two different indicia include one color of a line conveying the meaning of a roof ridge and a different color of a line conveying the meaning of roof valley.

60. (New) A computer-implemented method for generating a roof estimate, the method comprising:

receiving a first aerial image of a building;

receiving a second aerial image of the building having the roof;

receiving a third aerial image of the building, each of the aerial images providing a different view of the roof of the building;

correlating the first aerial image with the second aerial image and third aerial image;

generating, based at least in part on the correlation between the first, second and third aerial images, a three-dimensional model of the roof that includes a plurality of planar roof sections that each have a corresponding slope, area, and edges; and

generating and transmitting a roof estimate report that includes one or more top plan views of the three-dimensional model annotated with numerical indications of at least one of the slope, area, and lengths of the edges of the plurality of planar roof sections, wherein the roof estimate report includes at least two different indicia for different types of roof properties.

61. (New) The method of claim 60 wherein the correlating the first aerial image with the second and third aerial image includes receiving an indication of pairs of points on each of the images corresponding to substantially the same point on the roof depicted in each of the images.

62. (New) The method of claim 61 wherein the correlating the first aerial image with the second and third aerial image further includes registering the pairs of points and the generating the three-dimensional model includes generating the three-dimensional model based on the registering of the pairs of points.

63. (New) A computer-implemented method for generating a roof estimate, the method comprising:

receiving a request for a roof estimate report for the roof of the building;

receiving location information regarding the building;

receiving a first aerial image of the building having the roof;

receiving a second aerial image of the building having the roof, the first and second images of the roof being independent of each in the views provided of the roof, each of the aerial images providing a different view of the roof of the building;

correlating the first aerial image with the second aerial image;

generating, based at least in part on the correlation between the first and second aerial images, a three-dimensional model of the roof that includes a plurality of planar roof sections that each have a corresponding pitch, area, and edges;

determining a pitch of a plurality of sections of the roof;

determining a direction of the pitch for each of the plurality of sections of the roof for which a pitch was determined;

generating a roof estimate report that includes a top plan views of the three-dimensional model annotated with numerical indications of the determined pitch and the direction of the pitch;

displaying on at least one top plan view a graphical indication of the pitch value of the respective roof sections that conveys the pitch value;

determining a ridge line and a valley line of the roof;

displaying on at least one top plan view a ridge line in which the property of it being a ridge line is conveyed by it being displayed in a first color and a valley line in which the property of it being a valley line is convey by it being in a second color, different from the first color; and

transmitting the generated roof report.

64. (New) The method of claim 63 further comprising:

displaying on at least one top plan view of the roof a graphical indication of the pitch direction of the respective roof sections that conveys the direction of the pitch.

65. (New) The method of claim 63 wherein the top plan view showing the pitch value is a different top plan view than the one showing the ridge line and the valley line.

66. (New) The method of claim 65 wherein the correlating the first aerial image with the second aerial image further includes registering pairs of points and the generating the three-dimensional model includes generating the three-dimensional model based on the registering of the pairs of points.

Amendments to the Abstract:

Please replace the previous Abstract with the following redlined Abstract:

Methods and systems for roof estimation are described. Example embodiments include a roof estimation system, which generates and provides roof estimate reports annotated with indications of the size, geometry, pitch and/or orientation of the roof sections of a building. Generating a roof estimate report may be based on one or more aerial images of a building. The slope and orientation images are typically oblique perspective views and top plan views of the buildings in the area. In some embodiments, generating a roof estimate report of a specified building roof may include generating a three-dimensional model of the roof, and generating a report that includes one or more views of the three-dimensional model, the views annotated with indications of the dimensions, area, and/or slope of sections of the roof. This abstract is provided to comply with rules requiring an abstract, and it is submitted with the intention that it will not be used to interpret or limit the scope or meaning of the claims.

REMARKS

Claims 1-56 are subject to reexamination upon entry of the present amendment. Claims 1, 18, 36, 37, and 41 are amended herein. Claims 43, 44 and 45 are canceled herein. Claims 57-66 are new. The Abstract is also amended herein. No new matter is being presented by way of this Amendment.

The Examiner is thanked for the in-person interview conducted on October 17, 2013. This amendment and these remarks are based on that interview. The patent owner's summary of the interview is provided herein as part of these remarks.

No new matter is being presented by way of this amendment. All claim amendments find support in the Application of the '436 Patent as filed and do not broaden any claim. The patent owner, and two consultants Brian Curless and Kevin Jones, along with the undersigned law firm make no representation herein regarding whether any reference provided in any information disclosure statement, any reference referred to herein or any reference referred to in any Declaration or Exhibit filed herewith is or is not prior art with respect to the '436 Patent.

Interview Summary

During the interview, the Examiner indicated that any amendments to the claims should specifically use language from the specification to ensure that there was proper support in the Application as filed. As one example, the term "orthogonal view" was discussed as the term used in this industry for a downward looking aerial view of a home. It was discussed at the interview that Figure 5A is an actual photographic image that is such an orthogonal view and that Figure 3 shows image files having an orthogonal view. The term used in the Application as filed was "top plan view," which was discussed at the interview as having the same meaning as orthogonal view within the context of the '436 Patent. The Examiner requested that the claims use the term from the '436 Patent, "top plan view," to cover images of the type of views shown rather than the more widely used term, "orthogonal view," with the understanding that they mean the same thing in the context of the '436 Patent and in the industry.

Figure 5B shows two oblique image views of the same house shown in Figure 3 and Figure 5A. It was discussed at the interview that these views are, in fact called, oblique views in the industry today and that the Application as filed provided these as examples of oblique views used in creating the final report that was in various claims.

The '578 Patent, which is the parent case to the '436 Patent was incorporated by reference into the '436 Patent. In the Abstract of the '578 Patent, these views were called "oblique perspective views," see '578 Abstract, line 8, and perspective views in other places, see for example, Col. 4, lines 10-11 and Col. 5, lines 55-57 as examples. This issue was discussed during the interview and the Examiner stated that it was preferred to use the terms from the specification. One suggestion during the interview was to refer to them as a view that is "other than a top plan view" if they were being claimed in the independent claims and then in a dependent claim, and to be more specific in calling them oblique perspective views or perspective views. Thus, the term perspective view of the patent is used in some places and the term "oblique perspective view" is used in other places as having generally the same meaning as an oblique view as used in the industry.

In order to clarify the support of the language in the '436 Patent itself, the Abstract is being amended to include the reference to oblique perspective views that was found in the parent '578 Patent. This does not constitute new matter since it was part of the original '578 Patent that was incorporated by reference.

During the interview, a presentation was made during which Chris Pershing and Brian Curless, along with the two attorneys attending, David Carlson and Greg Gardella, who made comments. A copy of that presentation is included herewith as Attachment 1. During the presentation, a physical model of a home in the form of a bird house was demonstrated to the Examiner and an explanation made regarding how the problem was understood, addressed and solved with regard to this model.

Slides 4 and 5 of Attachment 1 as presented at the interview explain how stereoscopic pairs of images are created. During the interview the distinction between stereoscopic pairs of images was discussed with respect to these two slides. Slide 4 is a copy of Figure 3 of Exhibit C that was filed with the supplemental Reexam. This Exhibit C is an English

language version of the document referred to in paragraph 6 of the European Patent No. EP 1 010 966 B1 as describing how stereoscopic images are acquired. According, the text of Exhibit C is one teaching regarding how these images are obtained and how they are different from a standard orthographic view and an oblique perspective view.

As stated in Exhibit C and shown in its Figure 3, the stereoscopic images are acquired as orthophotos 5. They are not obtained from two oblique images nor from one orthophoto and one oblique. As both Mr. Pershing and Dr. Curless explained in the interview, and Dr. Curless sets forth in his declaration, a stereoscopic pair of images are obtained from two orthographic images.

Dr. Curless states:

> "As explained during the interview, the '966 patent requires carefully acquired stereoscopic aerial pairs of images which need significantly more data to create than the simple image files of unrelated images. As explained in the interview, stereoscopic aerial pairs of images are obtained using two top-plan view images, not from a top plan view image and an oblique image. Concretely, the EP '966 patent states that to create stereoscopic aerial pairs "two aerial photographs are taken in stereoscopic coverage, to give sets of two-dimensional, geometric image data and parameter data that contain highly detailed information on the camera angle of the image pairs, absolute image coordinates and other image recording parameters" (column 1, paragraph 2 of the EP '966 patent). These images and associated data are completely different from a top plan view image and one or more oblique images (also called perspective views in '578) that are unrelated to each other. Reconstructing shape from calibrated stereo pairs (as in the '966 patent) is well-known in computer vision to be quite different from, and substantially easier than, reconstructing shape from photographs taken from unknown viewpoints with unknown camera parameters (as in the '578 and '436 Patents)."

Curless Declaration, pp. 14-15.

As will be explained later herein, the claims are amended to specific that one image is a top plan view and the other image is a view other than a top plan view as discussed during the interview. Some of the claims specify that this other view is an oblique perspective view. Accordingly, this will be shown to be patentably distinct from the EP '966 and the all other prior art.

A. Rejections of claims 36-40 and 42-56 under 35 U.S.C. § 101

Claims 36-40 and 42-56 of the Patent under reexamination (the "Patent") are rejected under 35 U.S.C. § 101 because the claimed invention is allegedly drawn to non-statutory subject matter

Patent Owner respectfully traverses the rejections. However, the claims have been amended herein to advance prosecution of the reexamination of the Patent. In particular, claim 36 as amended recites in relevant part (emphasis added):

36. (Amended) A non-transitory computer-readable storage medium whose contents, ***which are computer executable instructions stored on the non-transitory computer-readable storage medium, when executed by a computer processor*** of a computing system, enable [a] the computing system to generate a roof estimate report for a building having a roof, by [performing] causing, when executed by the computer processor of the computing system, the computing system to perform a method comprising:

receiving [one] two or more images of the building, wherein at least one of the two or more images provides an oblique perspective view of the roof and one of the images provides a top plan view of the roof; . . ."

As shown above, claim 36 includes tangible limitations of "computer executable instructions stored on the non-transitory computer-readable storage medium," at least by describing the "non-transitory computer-readable storage medium" and the instructions as "causing, when executed by the computer processor of the computing system, the computing system to perform" a method comprising.

Therefore, claim 36 is directed to statutory subject matter under for at least the foregoing reasons. Since dependent claims 37-56 inherit the limitations of the corresponding independent claim 36 from which they depend, claims 37-56 are also directed to statutory subject matter for at least the same reasons presented above regarding claim 36.

For at least the foregoing reasons, Patent owner respectfully requests the applicable rejections of claim 36-40 and 42-56 be withdrawn.

B. Rejections of claims 1-5, 7-42 and 46-56 under 35 U.S.C. § 103 as being unpatentable over EP 966

Claims 1-5, 7-42 and 46-56 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over European Patent No. EP 1 010 966 B1 published October 23, 2002 (EP 966). All citations to EP 966 herein are from the first English translation of EP 966 provided in Exhibit B of the Supplemental Examination Request except for one reference made herein to the second English translation of EP 966 provided in Exhibit B of the Supplemental Examination Request.

Patent Owner respectfully traverses the rejection of claims 1-5, 7-42 and 46-56 under 35 U.S.C. §103(a). However, the independent claims have been amended for clarification to expedite prosecution of the reexamination. EP 966 does not teach or suggest all the features of any of claims 1-5, 7-42 and 46-56 as amended.

For example, claim 1 recites in relevant part (emphasis added):

> 1. A computing system for generating a roof estimate report, the computing system comprising:
>
> a memory;
>
> a roof estimation module that is stored on the memory and that is configured, when executed, to:
>
> receive a first and a second aerial image of a building having a roof, each of the aerial images providing a different view of the roof of the building, ***wherein the first aerial image provides a top plan view of the roof and the second aerial image provides an oblique perspective view of the roof, and are not a stereoscopic pair***;
>
> correlate the first aerial image with the second aerial image;
>
> generate, based at least in part on the correlation between the first and second aerial images, a three-dimensional model of the roof that includes a plurality of planar roof sections that each have a corresponding slope, area, and edges; and
>
> generate and transmit a roof estimate report that includes one or more top plan views of the three-dimensional model ***annotated with numerical values that indicate the corresponding slope***, area, and length of edges of at least some of the plurality of planar roof sections using at least two different indicia for different types of roof properties.

EP 966 does not teach or suggest a roof estimation system "***wherein the first aerial image provides a top plan view of the roof and the second aerial image provides an oblique perspective view of the roof, and are not a stereoscopic pair***."

Instead, in the '966 Patent, the images are taken and received as a stereoscopic pair and the raw data comes already matched as a stereoscopic pair. The images in a stereoscopic pair are not taken independently of each other, as they include geometric image data and parameter data that contain highly detailed information on the camera angle of the image pairs with respect to each other (see paragraph 2 of EP 966). The claimed invention of the '436 Patent does not make use of this particular information. The fact that the '436 Patent does not make use of such stereoscopic pairs of images and associated stereoscopic parameter data is further supported by the attached Declaration of both Chris Pershing and Dr. Curless, both of which are incorporated herein by reference and not quoted in full here to save space. Chris Pershing explained this in the interview and states this in his Declaration, paragraphs 3 and 4. In contrast, the system of EP 966 requires such stereoscopic pairs of images and associated stereoscopic parameter data and other image recording parameters in order to form the three-dimensional (3D) object description in that system. This is shown in the excerpts below from EP 966 (emphasis added):

> [0001] The present invention relates to a method for generating a three-dimensional object description of a localized spatial object - especially a building - from aerial stereoscopic pairs, whereby
>
> - two-dimensional image data from the aerial pairs and ***the stereoscopic parameter data*** are digitized and stored in a data processing system as three dimensional raw data;
>
> - two-dimensional orthophoto data and three dimensional object data are calculated from the raw data;
>
> - the three-dimensional object data is coordinated with external object-specific factual data to form a three-dimensional object description.
>
> …
>
> [0002]…In this way, stereoscopic aerial pairs of the objects, i.e. two aerial photographs ***are taken in stereoscopic coverage***, to give sets of two-dimensional, ***geometric image data and parameter data*** that ***contain highly detailed information on the camera angle of the image pair***s, absolute ***image coordinates***

> and other ***image recording parameters***. These data provide the raw data to calculate real oriented representations of the earth's surface. Scanning the individual aerial images into an electronic data processing system gives digital, two-dimensional image data. By considering ***the stereoscopic parameter data***, ***oriented aerial photographs*** with height information are determined by aerotriangulation. In this way, three-dimensional object data is gathered from the original raw data ***to form a three-dimensional object description***.

Furthermore, the use of such stereoscopic pairs of images and associated stereoscopic parameter data are explicitly recited in claim 1 of EP 966 as that from which the 3D object data are calculated. This is further evidence that use of such stereoscopic pairs of images and associated stereoscopic parameter data are necessary and required in the system of EP 966 in order to produce the 3D model description, thereby excluding and teaching away from the use of images that are not stereoscopic pairs. In particular claim 1 of EP 966 recites, in part (emphasis added):

> 1. A method of producing a three-dimensional object description of a located spatial object - in particular a building - ***from stereoscopic pairs of aerial pictures***, in which
>
> - from the pairs of aerial pictures two-dimensional image data ***and stereoscopic parameter data are stored digitized as three-dimensional raw data*** in a data processing installation;
>
> - two-dimensional orthophoto-data and ***three dimensional object data*** are ***calculated from the raw data***…

Thus, not only does EP 966 fail to teach or suggest the claimed roof estimation system, but EP 966 also teaches away from using such images that are not stereoscopic pairs by requiring use of such stereoscopic pairs of images and associated stereoscopic parameter data. As Mr. Jones points out in his declaration:

> "For example, stereoscopy as described in the 966 Patent requires two images taken at the same camera angle with respect to the image plane. Thus, they cannot be two images, one having a top plan view and one having another view, such as an oblique view. For example, when using aerial images of roofs, the stereoscopic pair of images of the roof may be two images both showing top plan views of the roof, each taken at a known distance between the respective camera positions. Also, the general $1/30^{th}$ rule of thumb in stereoscopy requires the distance between the camera positions taking each stereoscopic image to be substantially $1/30^{th}$ of the distance from the object being photographed.

Jones Declaration, ¶¶ 18 and 19.

Nothing in the EP '966 mentions that slope or pitch are provided on a top plan view of the roof. Instead, these are provided as tables in a separate document, as demonstrated by Exhibit F, the AeroDach web site that is the commercial implementation of the EP '966 patent. Thus, EP 966 describes outputting lengths of exterior edges of roof section on the "flat two-dimensional graphics" (see paragraph 33 and Fig. 3 of EP 966) and providing area generally (see paragraph 33 of EP 966), but does not teach or suggest providing any numerical values of slope or pitch on a top plan view of the roof, even if such measurements had been previously calculated or determined.

Furthermore, the Office points to paragraph 33 of EP 966 which states:

> [0033] The resulting calculated three-dimensional object description may be output either as flat two-dimensional graphics as shown in Fig. 3, and/or as a perspective three-dimensional representation as shown in Fig. 4, and then transmitted to the client computer. At the same time, ***the factual data*** is processed and added alphanumerically to the transmitted image data. For example, the roof can be provided in m^2 to give a first impression of the scope of a necessary roof renovation.

A description and antecedent basis is explicitly provided in EP 966 for "the factual data" referred to in paragraph 33 of EP 966. This appears in various earlier sections of the specification of EP 966. In particular, paragraph 11 of EP 966 states, in part (emphasis added):

> [0011]…***Factual data***, for example, could be ***cadastral data, road and/or other building data***. In this way, for example, unique pairing of ***address data containing a street name and house number*** can be effected with a particular building. The two-dimensional orthophoto data is stored together with these ***external factual data*** in a respective orthophoto-hybrid data set referenced to the specific object.

Cadastral data is "1 : of or relating to a cadastre 2 : showing or recording property boundaries, subdivision lines, buildings, and related details" (Merriam-Webster.com). A "cadaster" is "an official register of the quantity, value, and ownership of real estate used in apportioning taxes" (Merriam-Webster.com). Thus, "the factual data" of EP 966 is building data such as building address, building number and property boundaries stored together with the two-

dimensional data, and is not roof slope or pitch and has nothing to do with roof slope or pitch. This is shown further in paragraph 14 of EP 966, which states, in part (emphasis added):

> A particular advantage of the inventive method is that no longer - as was the case before - does a building need to be identified cumbersomely in an aerial image, but only the object-specific ***factual data*** need to be entered for the selection, for example, ***a street name and house number***. This is sufficient for the selection of an object-specific orthophoto-hybrid data set.

This is also shown further in paragraph 14 of EP 966 which states, in part, "By the unique combination with the object ***factual data***, ***such as street and house number***, a simple and unique access is guaranteed (emphasis added) and in paragraph 30 of EP 966, which states, in part "the orthophoto data is structured according to external ***factual data***, ***such as street addresses plus house numbers***" (emphasis added). Thus, "the factual data" that "is processed and added alphanumerically to the transmitted image data" as stated in paragraph 33 of EP 966 is not slope or pitch of a roof section, but is instead cadastral data such as building address or building number as shown above.

One significant indication that the EP '966 does not teach or even suggest that the pitch values and direction of pitch was what was intended by these statements is to look at what those practicing the EP '966 actually did. First, in the EP '966, no pitch values or directions are shown on the top plan view of the roof.

Exhibit F is one example of a commercial implementation of the EP '966 by the very company which invented it. In this Exhibit F, they did not put pitch values or direction on the top plan view of the roof itself. Instead, they labeled each roof facet or section with a letter and then placed a number on the edges that separate the facets, see pages 11-17, and in particular pages 13-15 of Exhibit F of the reexamination request. After this, a table was provided in which the data was shown for each facet and edge. This is a very cumbersome approach. It is exactly the opposite of the approach taken and claimed in the '436 Patent. Thus, the EP '966 teaches away from the claims of the '436 Patent.

The Office goes on to state:

> However, in light of the teachings to determine "all relevant information, such as" "roof pitch," and the teaching that "the information necessary for renovation" [of a roof] includes "roof form, ridge lines, roof line" and "roof structures," it would

> have been obvious to a person of ordinary skill in the art modify the teachings of EP 966 to arrive at a roof estimate report that includes "numerical values that indicate the corresponding slope of at least some of the plurality of planar roof sections".

Office Action, p. 19, second full paragraph.

Determining or calculating information such as roof pitch does not teach or suggest generating "one or more top plan views of the three-dimensional model annotated with numerical values that indicate the corresponding slope." Instead, as shown above, EP 966 specifically states in paragraph 33 that "the roof can provided in m^2," while not showing or making any mention of providing roof pitch on the "flat two-dimensional graphics" of Figure 3, or any other view of the roof for that matter. If annotating a top plan view of the roof with numerical values of roof pitch were necessary or particularly relevant for the EP 966 system, then why wouldn't the "flat two-dimensional graphic" shown in Figure 3, or at least the specification of EP 966 mention including such numerical values of slope on the "flat two-dimensional graphic"? The answer is that for the purposes of the system described in EP 966, providing the roof section lengths on the "flat two-dimensional graphic" or providing roof area generally is sufficient for roof renovation and there was no suggestion or motivation of any additional benefit of including numerical values of slope on the "flat two-dimensional graphic" of EP 966.

Therefore, EP 966 does not teach or suggest "generate and transmit a roof estimate report that includes one or more top plan views of the three-dimensional model ***annotated with numerical values that indicate the corresponding slope***" (emphasis added) as recited in claim 1Since dependent claims 2-17 inherit the limitations of the corresponding independent claim 1 from which they depend, EP 966 also does not teach or suggest all the limitations of any of dependent claims 2-17 for at least the same reasons presented above regarding claim 1.

Therefore, claims 1-17 are not obvious in view of EP 966 for at least the reasons presented above.

Additionally, claim 2, which depends from claim 1, recites "…wherein the roof estimation module is further configured to correlate the first and second aerial images ***by***

receiving an indication of one or more corresponding points on the building shown in each of the first and second aerial images" (emphasis added). EP 966 does not teach or suggest this feature.

The Office points to paragraphs 11 and 24 of EP 966 as disclosing this feature. Patent Owner respectfully disagrees. Paragraph 11 describes how the "building address data containing a street name and house number" (i.e., the "external factual data" of EP 966) is stored together with the "two-dimensional orthophoto data." There is no mention of receiving any indication of particular corresponding points in the first and second aerial images, let alone "corresponding points ***on the building*** shown in each of the first and second aerial images" as recited in claim 2 (emphasis added).

Paragraph 24 of EP 966 discloses that "the desired roof surface can be marked by clicking" to request the description of the roof. There is no mention in EP 966 of indicating a particular point on the building, only the user marking the roof surface generally to identify which roof the request is for. Also, there is no mention in EP 966 of receiving any indication of particular corresponding points in any first and second aerial images. Even if the user did mark a particular a point on the building in an image in EP 966 to identify the roof for the request, there is no teaching or suggestion of receiving any indication of a point on another image specifically corresponding to that point marked by the user in EP 966.

Thus, EP 966 does not teach or suggest all the limitations of claim 2 and claim 2 is not obvious in view of EP 966 for at least these additional reasons.

Additionally, claim 3, which depends from claim 1, recites "…wherein the roof estimation module is further configured to generate the three-dimensional model ***by receiving an indication of at least one of a ridgeline of the roof, a valley of the roof, an edge of the roof, a hip of the roof, and a gable of the roof***" (emphasis added). EP 966 does not teach or suggest this feature.

The Office points to paragraph 24 of EP 966 as disclosing this feature. Patent Owner respectfully disagrees. Paragraph 24 of EP 966 discloses that "the desired roof surface can be marked by clicking" to request the description of the roof. There is no mention in EP 966 of this user indicating specifically any of "a ridgeline of the roof, a valley of the roof, an edge of

the roof, a hip of the roof, and a gable of the roof" as recited in claim 3. EP 966 just describes the user marking the roof surface generally to identify which roof the request is for (see paragraph 24 of EP 966). Nowhere in EP 966 does it describe such a marking of the roof being an ***indication*** of any particular roof feature, let alone indicating specifically a roof ridgeline, edge, valley, hip or gable.

Thus, EP 966 does not teach or suggest all the limitations of claim 3 and claim 3 is not obvious in view of EP 966 for at least these additional reasons.

Additionally, claim 8, which depends from dependent claim 7, recites "…wherein the length is located adjacent to a line representing a segment, ***the slope is located next to an arrow indicating direction of the slope*** and the area is located within a section having the area" (emphasis added). EP 966 does not teach or suggest this feature.

On page 25 of the Office Action, the Office points to paragraph 33 of EP 966 regarding the "the factual data" of EP 966 being "added alphanumerically to the transmitted image data." However, a description and antecedent basis is explicitly provided in EP 966 for "the factual data" referred to in paragraph 33 of EP 966 in various earlier sections of the specification and based on these descriptions, "the factual data" in EP 966, does not include or have anything to do with pitch or slope of the roof. In particular, paragraph 11 of EP 966 states, in part (emphasis added):

> [0011]…***Factual data***, for example, could be ***cadastral data, road and/or other building data***. In this way, for example, unique pairing of ***address data containing a street name and house number*** can be effected with a particular building. The two-dimensional orthophoto data is stored together with these ***external factual data*** in a respective orthophoto-hybrid data set referenced to the specific object.

Cadastral data is "1 : of or relating to a cadastre 2 : showing or recording property boundaries, subdivision lines, buildings, and related details" (Merriam-Webster.com). A "cadaster" is "an official register of the quantity, value, and ownership of real estate used in apportioning taxes" (Merriam-Webster.com). Thus, "the factual data" of EP 966 is building data such as building address and property boundaries and the like stored together with the two-dimensional data, and is not roof slope or pitch and has nothing to do with roof slope or pitch. This is shown further in paragraph 14 of EP 966, which states, in part (emphasis added):

> A particular advantage of the inventive method is that no longer - as was the case before - does a building need to be identified cumbersomely in an aerial image, but only the object-specific ***factual data*** need to be entered for the selection, for example, ***a street name and house number***. This is sufficient for the selection of an object-specific orthophoto-hybrid data set.

This is also shown further in paragraph 14 of EP 966 which states, in part, "By the unique combination with the object ***factual data***, ***such as street and house number***, a simple and unique access is guaranteed (emphasis added) and in paragraph 30 of EP 966, which states, in part, "the orthophoto data is structured according to external ***factual data***, ***such as street addresses plus house numbers***" (emphasis added). Thus, "the factual data" that "is processed and added alphanumerically to the transmitted image data" as stated in paragraph 33 of EP 966 is not slope or pitch of a roof section, but is instead cadastral data such as building address, building number, or building property boundaries, as shown above.

The Office goes on to state in the Office Action:

> The claim language describes a conventional written notation to indicate slope. Accordingly, in view the express instruction in EP 966 to determine "all relevant information, such as roof shape, roof surface, roof pitch" (¶ 0033) and that "factual data is processed and added alphanumerically to the transmitted image data" (¶ 0033), it would have been obvious to add slope data to the image data using a conventional written notation to indicate slope."

Office Action, p. 26, lines 1-6.

Patent Owner respectfully disagrees. As shown above, the "factual data" of EP 966 is building data such as building address and property boundaries that is stored together with the two-dimensional data, and is not roof slope or pitch and has nothing to do with roof slope or pitch. Adding building data such as building address, house number and/or property boundaries to the transmitted image data, would not suggest or motivate one to "add slope data to the image data" as the Office alleges, let alone wherein "the slope is located next to an arrow indicating direction of the slope" as recited in claim 8 of the '436 Patent.

Furthermore, determining or calculating information such as roof pitch would not suggest or motivate one to "add slope data to the image data" on the top plan view as the Office alleges, let alone wherein "the slope is located next to an arrow indicating direction of the slope" as recited in claim 8 of the '436 Patent. Instead, as shown above, EP 966 specifically states in

paragraph 33 that "the roof can provided in m^2," while not showing or making any mention of providing roof pitch or slope on the "flat two-dimensional graphics" of Figure 3, or any other view of the roof for that matter. In fact, for the purposes of the system described in EP 966, providing the roof section lengths or area on the "flat two-dimensional graphic" is sufficient to give an impression of the scope of roof renovation and there was no suggestion or motivation of any specific additional benefit of adding any indicia of slope, regardless of the particular type of slope notation that could be used to do so. Thus, even if the claim language of claim 8 did describe a "conventional written notation to indicate slope," there would be no motivation or suggestion to modify the system of EP 966 to include such notation.

Also, the Office provides no support and points to no documentary evidence of what a "conventional written notation to indicate slope" is. In fact, Exhibit F teaches the very opposite. Thus, Patent Owner respectfully submits that such factual assertions are improperly officially noticed and hereby rebuts such purported Official Notice taken by the Office. Withdrawal of this ground of rejection is requested.

The Office alleges on page 26 of the Office Action that:

> …the differences between the claimed invention and the embodiment expressly disclosed by EP 966, Fig. 3, are merely differences in nonfunctional descriptive material. Accordingly, these differences do not patentably distinguish the claimed invention over the prior art. See MPEP § 2111.05.

Office Action, p. 26, last full paragraph.

Patent Owner respectfully disagrees. In particular, MPEP 2111.05 Section I paragraph A, states, in part (emphasis added):

> To be given patentable weight, the printed matter and associated product must be in a functional relationship. A functional relationship can be found where the ***printed matter performs some function with respect to the product to which it is associated***. See Lowry, 32 F.3d at 1584(citing Gulack, 703 F.2d at 1386). For instance, ***indicia on a measuring cup perform the function of indicating volume within that measuring cup***. See In re Miller, 418 F.2d 1392, 1396, 164 USPQ 46, 49 (CCPA 1969).

Likewise, the indicia of slope on the roof estimate report referred to in claim 8 of the '436 Patent performs the function of indicating slope of the roof shown within that roof estimate report. Thus, this functional relationship is evidence that the roof estimate report does

not merely provide support for the indicia of slope on the roof estimate report, but the indicia of slope has a functional relationship with the roof shown within that report. The fact that the specific type of functional relationship may be different than that in *In re Miller* above is not relevant as a matter of law. See *In re Gulack*, which states (emphasis added):

> A ***functional relationship of the precise type*** found by the CCPA in Miller -to size or to type of substrate, or conveying information about substrate-***is not required***. What ***is*** required is the existence of ***differences between the appealed claims and the prior art*** sufficient to establish patentability. The bare presence ***or absence*** of a specific functional relationship, without further analysis, is ***not dispositive of obviousness***. Rather, the critical question is whether there exists any new and unobvious functional relationship between the printed matter and the substrate.

In re Gulack, 703 F.2d 1381, 1386 (Fed. Cir. 1983)

Thus, the relevant question is whether the functional relationship of the indicia of slope with the roof shown within the roof estimate report is new and nonobvious.[1] The language of claim 8, "wherein…***the slope is located next to an arrow indicating direction of the slope***" defines this functional relationship of the indicia of slope with the roof shown within the roof estimate report. As shown above, the Office has failed to present a *prima facie* case of obviousness of this feature of claim 8 and EP 966 does not teach or suggest this element.

Furthermore, MPEP 2111.05 states:

> USPTO personnel ***must*** consider ***all*** claim limitations when determining patentability of an invention over the prior art. In re Gulack, 703 F.2d 1381, 1385, 217 USPQ, 401, 403-04 (Fed. Cir. 1983). Since a claim must be read as a whole, USPTO personnel ***may not disregard claim limitations comprised of printed matter***. See Gulack, 703 F.2d at 1384, 217 USPQ at 403; see also Diamond v. Diehr, 450 U.S. 175, 191, 209 USPQ 1, 10 (1981).

Additionally, *In re Gulack states:*

> 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***

[1] *In re Gulack*, 703 F.2d 1381, 1386 (Fed. Cir. 1983), states (emphasis added): A functional relationship of the precise type found by the CCPA in Miller -to size or to type of substrate, or conveying information about substrate-is not required. What is required is the existence of differences between the appealed claims and the prior art sufficient to establish patentability. The bare presence or absence of a specific functional relationship, without further analysis, is not dispositive of obviousness. Rather, the ***critical question is whether there exists any new and unobvious functional relationship between the printed matter and the substrate***.

> ***matter***. Under section 103, the 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***.

In re Gulack, 703 F.2d 1381, 1385 (Fed. Cir. 1983)

Therefore, since the language of claim 8 "wherein…***the slope is located next to an arrow indicating direction of the slope***" defines a functional relationship of the indicia of slope with the roof shown within the roof estimate report and EP 966 does not teach or suggest this element, it must be given patentable weight.

Therefore claim 8 is not obvious in view of EP 966 for at least the additional reasons above.

Additionally, dependent claim 10, which depends from claim 1, recites "…wherein the different types of roof properties include a ridge line and a valley line and ***the at least two different indicia include one color of a line associated with a ridge and a different color of a line associated with a valley***" (emphasis added). EP 966 does not teach or suggest this feature.

The Office agrees on page 28 of the Office Action that EP 966 does not explicitly disclose "the at least two different indicia include one color of a line associated with a ridge and a different color of a line associated with a valley" as recited in claim 10, but alleges it would be obvious to one of ordinary skill in the art at the time the invention was made in view of EP 966 to use "at least two different indicia" that "include one color of a line associated with a ridge and a different color of a line associated with a valley" as recited in claim 10. Patent owner respectfully disagrees.

The Office points to paragraph 23 of EP 966, which states, in part (emphasis added) "In the previously proposed application, it is conceivable, for example, to mark graphically in color the outline of roof surfaces that form the object in order to highlight it. This display is extremely user friendly." However, highlighting the outline of the roof surface to be "user friendly" is not a reason for using one color for a ridge line and another color for a valley. Using one color for a ridge line and another color for a valley is not done for highlighting or for mere ornamental purposes; it is done to distinguish ridges from valleys. In the EP '966 this was

done on the computer screen and all outlines were likely same color. It was not done to provide the function of showing which lines were ridges and which were valleys.

Having colored lines perform the function of showing ridges and valleys serves an important specific function to indicate to the builder, roof renovator or other user of the report which line is a valley and which line is a ridge such that the direction of slope can be easily determined when looking at the flat top plan view of the roof in the roof estimate report. Thus, it is not merely an ornamental feature. EP 966 does not teach or suggest such a reason, or any reason at all, to specifically distinguish ridges from valleys, let alone using two different colors to do so.

Furthermore, the Office alleges on page 29 of the Office Action, that:

> …the differences between the claimed invention and the prior art are merely differences in nonfunctional descriptive material. Accordingly, these differences do not patentably distinguish the claimed invention over the prior art. See MPEP 2111.05.

Office Action, p. 29, first full paragraph

Patent Owner respectfully disagrees for the reasons previously explained and will not repeat them here to save space.

The indicia of one color of a line associated with a ridge and a different color of a line associated with a valley on the roof estimate report referred to in claim 10 performs the function of distinguishing ridges from valleys of the roof shown within that roof estimate report for the reasons stated above. Thus, this functional relationship is evidence that the roof estimate report does not merely provide support for the indicia of different colors, but the indicia of different colors has a functional relationship with the roof shown within that report. The fact that the specific type of functional relationship may be different than that in *In re Miller* above is not relevant as a matter of law. See *In re Gulack*, which states (emphasis added):

> A ***functional relationship of the precise type*** found by the CCPA in Miller -to size or to type of substrate, or conveying information about substrate-***is not required***. What ***is*** required is the existence of ***differences between*** the appealed ***claims and the prior art*** sufficient to establish patentability. The bare presence ***or absence*** of a specific functional relationship, without further analysis, is ***not dispositive of obviousness***. Rather, the critical question is whether there exists any

> new and unobvious functional relationship between the printed matter and the substrate.

In re Gulack, 703 F.2d 1381, 1386 (Fed. Cir. 1983)

Therefore, the relevant question is whether the functional relationship of the indicia of different colors with the roof shown within the roof estimate report is new and nonobvious.[2] The language of claim 8, "…wherein the different types of roof properties include a ridge line and a valley line and ***the at least two different indicia include one color of a line associated with a ridge and a different color of a line associated with a valley***" defines this functional relationship of the indicia of different colors with the roof shown within the roof estimate report. As shown above, the Office has failed to present a *prima facie* case of obviousness of this feature of claim 10 and EP 966 does not teach or suggest this element.

Furthermore, MPEP 2111.05 states:

> USPTO personnel ***must*** consider ***all*** claim limitations when determining patentability of an invention over the prior art. In re Gulack, 703 F.2d 1381, 1385, 217 USPQ 401, 403-04 (Fed. Cir. 1983). Since a claim must be read as a whole, USPTO personnel ***may not disregard claim limitations comprised of printed matter***. See Gulack, 703 F.2d at 1384, 217 USPQ at 403; see also Diamond v. Diehr, 450 U.S. 175, 191, 209 USPQ 1, 10 (1981).

Additionally, In re Gulack states:

> 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***. Under section 103, the 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***.

In re Gulack, 703 F.2d 1381, 1385 (Fed. Cir. 1983)

Therefore, since the language of claim 10 "…wherein the different types of roof properties include a ridge line and a valley line and ***the at least two different indicia include one color of a line associated with a ridge and a different color of a line associated with a valley***"

---

[2] *In re Gulack*, 703 F.2d 1381, 1386 (Fed. Cir. 1983), states (emphasis added): A functional relationship of the precise type found by the CCPA in Miller -to size or to type of substrate, or conveying information about substrate- is not required. What is required is the existence of differences between the appealed claims and the prior art sufficient to establish patentability. The bare presence or absence of a specific functional relationship, without further analysis, is not dispositive of obviousness. Rather, the ***critical question is whether there exists any new and unobvious functional relationship between the printed matter and the substrate***.

defines a functional relationship of the indicia of different colors with the roof shown within the roof estimate report and EP 966 does not teach or suggest this element, it must be given patentable weight.

Thus, EP 966 does not teach or suggest all the limitations of claim 10 and claim 10 is not obvious in view of EP 966 for at least these additional reasons.

Additionally, dependent claim 13, which depends from claim 1, recites "…wherein the different types of roof properties include a ridge length and a valley length and ***the at least two different indicia include one color of a line associated with a ridge and a different color of a line associated with a valley***" (emphasis added). Although the language of dependent claim 13 is not identical to that of dependent claim 10, the nonobviousness of claim 13 for reasons additional to those with respect to claim 1 will be apparent in view of the above discussion regarding dependent claim 10.

Additionally, dependent claim 17, which depends from claim 1, recites "…wherein the different types of roof properties include a slope and the at least two different ***indicia include a slope indicia, wherein the slope indicia is an arrow in a direction of the slope with a numerical value adjacent thereto***" (emphasis added). Although the language of dependent claim 17 is not identical to that of dependent claim 8, the nonobviousness of dependent claim 17 for reasons additional to those with respect to claim 1 will be apparent in view of the above discussion regarding dependent claim 8.

Therefore, the Office has failed provide a *prima facie* case of obviousness for claims 1-17 and claims 1-17 are not obvious in view of EP 966 for at least the reasons presented above.

Independent method claim 18 as amended recites (emphasis added):

> 18. A computer-implemented method for generating a roof estimate, the method comprising:
>
> receiving a first and a second aerial image of a building having a roof, each of the aerial images providing a different view of the roof of the building *wherein the first aerial image provides a top plan view of the roof and the second aerial image provides a view of the roof that is other than a top plan view and neither of the two images are part of a stereoscopic pair;*
>
> correlating the first aerial image with the second aerial image;

> generating, based at least in part on the correlation between the first and second aerial images, a three-dimensional model of the roof that includes a plurality of planar roof sections that each have a corresponding slope, area, and edges; and
>
> transmitting a roof estimate report that includes one or more top plan views of the three-dimensional model annotated with numerical indications of at least one of the slope, area, and lengths of the edges of the plurality of planar roof sections, wherein the roof estimate report includes at least two different indicia for different types of roof properties.

EP 966 does not teach or suggest the feature of "each of the aerial images providing a different view of the roof of the building **wherein the first aerial image provides a top plan view of the roof and the second aerial image provides a view of the roof that is other than a top plan view and neither of the two images are part of a stereoscopic pair**;" as recited in claim 18 as amended (emphasis added). Instead, in the system described in EP 966, the images are taken and received as a stereoscopic pair and the raw data comes already matched as a stereoscopic pair. The images in a stereoscopic pair are not taken independent of each other, let alone at different times and on different dates as recited in claim 18, as they include geometric image data and parameter data that contain highly detailed information on the camera angle of the image pairs with respect to each other (see paragraph 2 of EP 966), the benefit of which the claimed invention of the '436 Patent does not make use.

The fact that the '436 Patent does not make use of the benefit of use of such stereoscopic pairs of images and associated stereoscopic parameter data is further supported by the attached Declarations of Jones and Curless which are incorporated herein by reference, the details of which are not repeated here to save space. In contrast, the system of EP 966 requires such stereoscopic pairs of images and associated stereoscopic parameter data and other image recording parameters in order to form the three-dimensional object description in that system. This is shown in the excerpts below from paragraphs 1 and 2 in EP 966 previously quoted and not repeated here.

Furthermore, the use of such stereoscopic pairs of images and associated stereoscopic parameter data are explicitly recited in claim 1 of EP 966 as that from which the 3D object data are calculated. This is further evidence that use of such stereoscopic pairs of images and associated stereoscopic parameter data are necessary and required in the system of EP 966 in

order to produce the 3D model description of that system, thereby excluding and teaching away from the use of images taken independent of each other. In particular claim 1 of EP 966 recites, in part (emphasis added):

> 1. A method of producing a three-dimensional object description of a located spatial object - in particular a building - ***from stereoscopic pairs of aerial pictures***, in which
>
> - from the pairs of aerial pictures two-dimensional image data ***and stereoscopic parameter data are stored digitized as three-dimensional raw data*** in a data processing installation;
>
> - two-dimensional orthophoto-data and three dimensional object data are ***calculated from the raw data***…

Thus, EP 966 fails to teach or suggest the amended claim feature of "receiving a first and a second aerial image of a building having a roof, each of the aerial images providing a different view of the roof of the building "**wherein the first aerial image provides a top plan view of the roof and the second aerial image provides a view of the roof that is other than a top plan view and neither of the two images are part of a stereoscopic pair**."

Since dependent claims 19-35 inherit the limitations of the corresponding independent claim 18 from which they depend, EP 966 also does not teach or suggest all the limitations of any of dependent claims 19-35 for at least the same reasons presented above regarding claim 18.

Therefore, claims 18-35 are not obvious in view of EP 966 for at least the reasons presented above.

Additionally, dependent method claim 20, which depends from claim 18, recites "…wherein correlating the first and second aerial images ***includes receiving an indication of one or more corresponding points shown in each of the first and second aerial images***" (emphasis added). Although the language of dependent method claim 20 is not identical to that of dependent system claim 2, the nonobviousness of claim 20 for reasons additional to those with respect to independent claim 18 will be apparent in view of the above discussion regarding dependent claim 2.

Additionally, dependent method claim 22, which depends from claim 18, recites "…wherein ***generating the three-dimensional model includes receiving an indication of at least one of a ridgeline of the roof, a valley of the roof, an edge of the roof, a hip of the roof, and a gable of the roof***" (emphasis added). Although the language of dependent method claim 22 is not identical to that of dependent system claim 3, the nonobviousness of claim 22 for reasons additional to those with respect to independent claim 18 depends will be apparent in view of the above discussion regarding dependent claim 3.

Additionally, dependent method claim 26, which depends from claim 18, recites "…wherein ***the length is located adjacent to a line representing a segment, the slope is located next to an arrow indicating direction of the slope and the area is located within a section having the area***" (emphasis added). Although the language of dependent method claim 26 is not identical to that of dependent system claim 8, the nonobviousness of claim 26 for reasons additional to those with respect to independent claim 18 will be apparent in view of the above discussion regarding dependent claim 8.

Additionally, dependent method claim 28, which depends from claim 18, recites "…***wherein the different types of roof properties include a ridge line and a valley line and the at least two different indicia include one color of a line associated with a ridge and a different color of a line associated with a valley***" (emphasis added). Although the language of dependent method claim 28 is not identical to that of dependent system claim 10, the nonobviousness of claim 28 for reasons additional to those with respect to independent claim 18 will be apparent in view of the above discussion regarding dependent claim 10.

Additionally, dependent method claim 31, which depends from claim 18, recites "…wherein ***the different types of roof properties include a ridge length and a valley length and the at least two different indicia include one color of a line associated with a ridge and a different color of a line associated with a valley***" (emphasis added). Although the language of dependent method claim 31 is not identical to that of dependent system claim 10, the nonobviousness of claim 31 for reasons additional to those with respect to independent claim 18 will be apparent in view of the above discussion regarding dependent claim 10.

Additionally, dependent method claim 35, which depends from claim 18, recites "…***wherein the different types of roof properties include a slope and the at least two different indicia include a slope indicia, wherein the slope indicia is an arrow in a direction of the slope with a numerical value adjacent thereto***" (emphasis added). Although the language of dependent method claim 35 is not identical to that of dependent system claim 8, the nonobviousness of claim 35 for reasons additional to those with respect to independent claim 18 will be apparent in view of the above discussion regarding dependent claim 8.

Therefore, allowance of amended claims 18-35 is respectfully requested.

Independent computer-readable storage medium claim 36 as amended recites (emphasis added):

> 36. (Amended) A non-transitory computer-readable storage medium whose contents*, which are computer executable instructions stored on the non-transitory computer-readable storage medium, when executed by a computer processor of a computing system,* enable the computing system to generate a roof estimate report for a building having a roof, by causing, when executed by the computer processor of the computing system, the computing system to perform a method comprising:
>
> receiving *two or more images of the building, wherein at least one of the two or more images provides an oblique perspective view of the roof and one of the images provides a top plan view of the roof;*
>
> *receiving an indication of pairs of points on the two or more images, each pair of points corresponding to substantially the same point on the roof depicted in each of the two or more images;*
>
> *generating, based on the two or more images of the building, a three-dimensional model of the roof that includes a plurality of planar roof sections that each have a corresponding area and edges, wherein the generating, based on the two or more images of the building, the model of the roof includes generating the model of the roof based on the receiving the indication of the pairs of points on the two or more images of the building*; and . . ."

EP 966 does not teach or suggest the claimed features of:

> "*two or more images of the building, wherein at least one of the two or more images provides an oblique perspective view of the roof and one of the images provides a top plan view of the roof;*

> *receiving an indication of pairs of points on the two or more images, each pair of points corresponding to substantially the same point on the roof depicted in each of the two or more images;*
>
> *generating, based on the two or more images of the building. . .”*

as recited in amended claim 36. In contrast, EP 966 discloses using stereoscopic ***pairs*** of images to perform a “three-dimensional model calculation” (paragraph 16 of EP 966), not “generating ***a two-dimensional model*** of the roof based on a ***single*** aerial image of the roof” as recited in amended claim 36.

Novak fails to cure the deficiencies of EP 966 described above with respect to this feature that EP 966 lacks. The Office alleges Novak teaches “generating a ***two-dimensional model*** of the object based on a single image” (page 48, lines 15-16 of the Office Action, emphasis added). Patent Owner respectfully submits this is incorrect. What Novak teaches is merely calculating measurements of objects and distances between objects in the image (see paragraph 65 of Novak). This is not the same as actually generating a two-dimensional ***model*** of the object. In particular, paragraph 65 of Novak shows how measurement values are merely calculated without actually building any model (emphasis added):

> In the fourth step 440 the user selects a point at the right edge of the pole and a point at the left edge of the pole at the location that the pole diameter is desired. The image processor 190 automatically ***determines the distance*** in pixel units of measure between the selected points. The ***diameter*** of the pole at reference point “A” is then ***calculated*** 450 by multiplying the image scale at point “A” With the pixel separation distance. Lastly, once the diameter is known the ***circumference*** of the pole at point “A” is ***calculated*** 460 using principles of geometry. With the diameter known and the image processor’s 190 ability to ***determine the distance*** between any two substantially coplanar points on the pole, a myriad of other ***calculations*** may be performed including, for instance, the surface area ***calculation*** and the volume ***calculation***. Further, one with skill in the art can appreciate that in addition to cylindrical objects, the area and perimeter of all planar geometric shapes may be easily ***calculated*** by simply identifying the critical distances on the shape.

Thus, despite the conclusion of the Office, nowhere does Novak teach generating a ***two-dimensional model*** of the object based on a single image. The fact that Novak does not teach generating a two-dimensional model of the object based on a single image and merely

calculates measurements of objects and distances between objects in the image is further supported by the attached Declaration of Jones, he states:

> 22. The Novak reference describes calculating distances between points in a single image that are identified as being coplanar on a plane parallel to the image plane. However, points on a planar surface of the roof in an aerial image of the roof are rarely coplanar on a plane parallel to the image plane unless the planar surface of the roof is flat (i.e., has no pitch).

Jones Declaration, ¶ 22.

In addition, the Declaration of Curless states:

> I have also read the Novak patent, US 2003/0103651 A1. This patent concerns an invention for measuring the distance between points in a single, predominantly vertical plane based on a single image. It requires a substantial amount of extra equipment beyond a camera for the task, including a rangefinder to measure the distance to a point on a plane and devices to measure the orientation (at least, bearing/yaw and azimuth/pitch, perhaps assuming no roll) of the camera. Further, the camera must be calibrated with the aid of a large, planar calibration pattern roughly the size of the target plane to be measured; such a pattern can then be used to estimate camera focal length and lens distortion. This invention is substantially different from the one described in the '578 and '436 Patents. First and foremost, roofs are generally not comprised of a single, predominantly vertical plane; rather, they consist of a set of pitched facets that are not generally coplanar with each other. The Novak patent is intended for capturing vertical structures with a camera mounted on a tripod or equivalent to photograph a predominantly vertical planar structure, as opposed to the aerial imagery used to recover multi-faceted, upward-facing roofs in '578 and '436. In addition, the Novak patent requires substantial equipment and large, custom calibration patterns to estimate camera parameters before measuring distances between co-planar scene points from a single image. By contrast, the '578 and '436 Patents start just from two or more images (one of them a top-down view) without camera additional information, other than an image scale marker in one of the images.

Curless Declaration, pp. 15 and 16.

Therefore, the assertion as to what Novak teaches is incorrect.

In support of an argument that a person would have been motivated to combine the teachings of EP 966 and Novak, the Office states "In forming the combination, it would have been obvious that the 'planar geometric shapes' (Novak, ¶ 0065) of interest would be planar sections of a building roof (e.g., EP 966, ¶ 0003)." Patent Owner respectfully disagrees.

Novak states in paragraph 65 that "all planar geometric shapes may be easily calculated by simply ***identifying the critical distances on the shape***" (emphasis added). In Novak, these critical distances are determined between two substantially "***coplanar***" points in the image. This is reiterated throughout the specification of Novak. For example, the Abstract of Novak states "A photogrammetric apparatus for capturing a single image of an object, capturing a plurality of data about the image, analyzing the data, and computing relationships between substantially ***coplanar points in the image…*** The image processor includes routines for calibrating the apparatus, measuring distances between substantially coplanar points in the image, and calculating a plurality of relationships among various ***coplanar points in the image***" (emphasis added). This is also shown in the calculation of measurements in paragraph 65 of Novak, which states, in part "determine the distance between any two substantially ***coplanar*** points on the pole" (emphasis added). Paragraph 17 describes the process in which the user provides input indicating "at least ***two coplanar points in the image*** that are substantially ***coplanar on the real world target of interest***… For example, the distance between various points on a substantially ***coplanar utility*** pole may be calculated. More specifically, the point can correspond to ***cables or equipment on the pole***" (emphasis added).

The use of the term "coplanar" in Novak is "the conventional use in the context of geometric applications" (paragraph 10 of Novak), which means that "coplanar" refers to "lying in the same plane" (Collins English Dictionary – Complete and Unabridged, HarperCollins Publishers 1991, 1994, 1998, 2000, 2003). Since the "at least two coplanar points" described in Novak can be on objects with rounded surfaces such as cylindrical utility poles and cables on the pole as shown above, which do not have flat physical planar surfaces, the plane referred to in Novak on which the "at least two coplanar points" lie must be some imaginary plane in 3D space. However, any two points in 3D space are lying on some same imaginary "plane" in 3D space. Thus, for "at least two coplanar points in the image" being "coplanar" in Novak to have any significance or meaning in Novak, the imaginary plane in 3D space on which the two coplanar points lie must be with respect to some reference plane. That reference plane is the "image plane IP" of Novak (see at least paragraph 58 and Fig. 3 of Novak). This is because in Novak, the calculated real world distance between the "at least two coplanar points in the image"

is according to the distance in pixels between the points on the single image itself adjusted for scale. Thus, if the selected points in the image were ***not*** coplanar on a plane in 3D space that is substantially parallel to the reference "image plane IP" of Novak (e.g., if one point was on a utility pole in the foreground of the image and the other point was on a distant mountain in the background), the distance in pixels between the points on the image would be of no use in calculating the real world distance between the points in the image. This is evidenced in paragraph 65 of Novak, which states, "The image processor 190 automatically determines the distance ***in pixel units of measure between the selected points***. The diameter of the pole at reference point 'A' is then calculated 450 by ***multiplying the image scale*** at point 'A' with the ***pixel separation distance***" (emphasis added).

For at least the foregoing reasons, Patent owner respectfully requests the applicable rejection of claim 36 be withdrawn.

Since dependent claims from 36 inherit the limitations of the corresponding independent claim 36 from which they depend, EP 966 also does not teach or suggest all the limitations of any of dependent claims for at least the same reasons presented above regarding claim 36.

Additionally, dependent method computer-readable storage medium claim 37, which depends from claim 36, recites as amended (emphasis added):

> 37. The non-transitory computer-readable storage medium of claim 36 wherein generating the model further includes:
>
> ***correlating two of the one or more images by receiving an indication of one or more corresponding points on the building shown in each of the two images***; and
>
> generating a three-dimensional model ***based on the correlation between two of the one or more images***.

EP 966 does not teach or suggest all the limitations of claim 37 as amended. For example, EP 966 does not teach or suggest "correlating two of the one or more images by receiving an indication of one or more corresponding points on the building shown in each of the two images" as recited in claim 37 as amended. Paragraph 11 of EP 966 describes how the "building address data containing a street name and house number" (i.e., the "factual data" of EP

966) is stored together with the "two-dimensional orthophoto data" of EP 966. There is no mention of correlating any particular corresponding points in the first and second aerial images, let alone "corresponding points ***on the building*** shown in each of the first and second aerial images" as recited in claim 37 as amended (emphasis added).

Paragraph 24 of EP 966 discloses that "the desired roof surface can be marked by clicking" to request the description of the roof. There is no mention in EP 966 of indicating a particular point on the building, only the user marking the roof surface generally to identify which roof the request is for. Also, there is no mention in EP 966 of correlating any particular corresponding points in any first and second aerial images. Even if the user did mark a particular a point on the building in an image in EP 966 to identify the roof for the request, there is no teaching or suggestion of receiving any indication of a point on another image specifically corresponding to that point marked by the user in EP 966.

Therefore, EP 966 does not teach or suggest all the limitations of claim 37 as amended and claim 37 is not obvious in view of EP 966 for at least these additional reasons.

Additionally, dependent method computer-readable storage medium claim 47, which depends from claim 36, recites "…wherein ***the length is located adjacent to a line representing a segment, the slope is located next to an arrow indicating direction of the slope and the area is located within a section having the area***" (emphasis added). Although the language of dependent computer-readable storage medium claim 47 is not identical to that of dependent system claim 8, the nonobviousness of claim 47 for reasons additional to those with respect to independent claim 36 will be apparent in view of the above discussion regarding dependent claim 8.

Additionally, dependent computer-readable storage medium claim 49, which depends from claim 36, recites "…***wherein the different types of roof properties include a ridge line and a valley line and the at least two different indicia include one color of a line associated with a ridge and a different color of a line associated with a valley***" (emphasis added). Although the language of dependent computer-readable storage medium claim 49 is not identical to that of dependent system claim 10, the nonobviousness of claim 49 for reasons

additional to those with respect to independent claim 36 will be apparent in view of the above discussion regarding dependent claim 10.

Additionally, dependent computer-readable storage medium claim 52, which depends from claim 36, recites "…wherein ***the different types of roof properties include a ridge length and a valley length and the at least two different indicia include one color of a line associated with a ridge and a different color of a line associated with a valley***" (emphasis added). Although the language of dependent computer-readable storage medium claim 52 is not identical to that of dependent system claim 10, the nonobviousness of claim 52 for reasons additional to those with respect to independent claim 36 will be apparent in view of the above discussion regarding dependent claim 10.

Additionally, dependent computer-readable storage medium claim 56, which depends from claim 36, recites "…***wherein the different types of roof properties include a slope and the at least two different indicia include a slope indicia, wherein the slope indicia is an arrow in a direction of the slope with a numerical value adjacent thereto***" (emphasis added). Although the language of dependent computer-readable storage medium claim 56 is not identical to that of dependent system claim 8, the nonobviousness of claim 56 for reasons additional to those with respect to independent claim 36 will be apparent in view of the above discussion regarding dependent claim 8.

For at least the foregoing reasons, claims 1-5, 7-42 and 46-56 are not obvious in view of EP 966 and Patent owner respectfully requests the applicable rejections of claims 1-5, 7-42 and 46-56 be withdrawn.

C. Rejection of dependent claim 6 under 35 U.S.C. § 103 as being unpatentable over EP 966 in view of Aerodach Website

Claim 6 is rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over EP 966 in view of Aerodach Website. Patent owner respectfully traverses the rejection.

The Aerodach Website fails to cure the deficiencies of EP 966 described above with respect to claim 1 as amended and the Office does not allege the Aerodach Website teaches or suggests the features described above of claim 1 that EP 966 lacks. Since dependent claim 6

inherits all the limitations of independent claim 1 from which it depends, the combination of EP 966 and the Aerodach Website also does not teach or suggest all the limitations of dependent claim 6 for at least the same reasons presented above regarding claim 1.

Therefore, the Office has failed provide a *prima facie* case of obviousness of claim 6 over EP 966 in view of Aerodach Website and claim 6 is also not obvious over EP 966 in view of Aerodach Website for at least the reasons presented above.

For at least the foregoing reasons, Patent owner respectfully requests the applicable rejection of claim 6 be withdrawn.

D. Rejections of claims 1-5, 7-42 and 46-56 under 35 U.S.C. § 103 as being unpatentable over EP 966 in view of alleged Applicant's Admitted Prior Art

Claims 1-5, 7-42 and 46-56 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over EP 966 in view of alleged Applicant's Admitted Prior Art ("AAPA").

Patent owner respectfully traverses the rejections and the allegations of admitted prior art.

It appears the Office is alleging that several claim elements of claims 1-5, 7-42 and 46-56 are Applicant's Admitted Prior Art and also that several portions of the Detailed Description section of the specification of the Patent are Applicant's Admitted Prior Art.

MPEP 2129 Section I states (emphasis added):

> A statement by an applicant > in the specification or made < during prosecution ***identifying*** the work ***of another*** as "***prior art***" is an admission ** > which can be relied upon for both anticipation and obviousness determinations, regardless of whether the admitted prior art would otherwise qualify as prior art under the statutory categories of 35 U.S.C. 102. Riverwood Int'l Corp. v. R.A. Jones & Co., 324 F.3d 1346, 1354, 66 USPQ2d 1331, 1337 (Fed. Cir. 2003); Constant v. Advanced Micro-Devices Inc., 848 F.2d 1560, 1570, 7 USPQ2d 1057, 1063 (Fed. Cir. 1988). < However, even if labeled as "prior art," ***the work of the same inventive entity may not be considered prior art*** against the claims ***unless*** it falls under one of the statutory categories. Id.; see also Reading & Bates Construction Co. v. Baker Energy Resources Corp., 748 F.2d 645, 650, 223 USPQ 1168, 1172 (Fed. Cir. 1984) ("[W]here the inventor continues ***to improve upon his own work*** product, his foundational work product should ***not***, without a statutory basis, ***be treated as prior art*** solely because he admits knowledge of his own work. It is

> common sense that an inventor, regardless of an admission, has knowledge of his own work.").
>
> Consequently, the examiner ***must*** determine whether the subject matter identified as "prior art" is applicant's ***own work, or the work of another***. In the absence of another credible explanation, examiners should treat such subject matter as the work of another.
>
> MPEP 2129 Section II states (emphasis added):
>
> Where the specification identifies work done ***by another*** as "prior art," the subject matter so identified is treated as admitted prior art. In re Nomiya, 509 F.2d 566, 571, 184 USPQ 607, 611 (CCPA 1975) (holding applicant's labeling of two figures in the application drawings as "prior art" to be an admission that what was pictured was prior art relative to applicant's improvement).
>
> Additionally:
>
> A finding of obviousness should ***not*** be based on an ***implied admission*** erroneously creating imaginary prior art. That is ***not*** the intent of s 103.

Application of Ehrreich, 590 F.2d 902, 910 (C.C.P.A. 1979).

The Office has failed to present even a *prima facie* case that the several claim elements and the quoted portions of the Detailed Description of the Patent are admitted prior art.

First, there is no label of anything in the Patent as "prior art."

As a showing to rebut the allegation that this material is admitted prior art, the Declaration of an inventor, Chris Pershing, is attached and incorporated herein by reference. In this declaration, paragraphs 20 and 21, the inventor sets forth his statement the text asserted by the Examiner to be prior art are not, in fact prior art. Many times, the recognition of a problem is part of the inventive solution and once the problem is properly framed, again often an inventive step, the solution can be approached in a more straight forward fashion. In addition, the application of previously known math is solve a new problem and arrive at new solution is considered inventive. Mr. Pershing admits that he did not invent new math. What Mr. Pershing did was recognize a problem and then work out a solution to that problem. As he worked out a solution to that problem, he was able to use math that had been applied to different problems to reach a new solution in the creation of roof reports. As he points out in his declaration, he realizes that others might use different systems, software code and math from what he used to

achieve his claimed invention of the '436 Patent. This recognition does not render the statements in the '436 Patent as prior art.

Mr. Pershing states in his declaration as follows:

> In fact, I am an inventor of the subject matter of Column 6, lines 50-67 and Column 7, lines 1-7. I do not admit that any of this description is prior art since it is not. I defined a problem that others had not recognized and then created a solution to that problem, which I explained in the '436 patent, including in Columns 6 and 7. Of course, I did not invent the math for performing the image analysis solely from the image data files, (it is rare that someone invents math) but what I did was identify a significant problem in the roofing industry, and I also determined which math should be applied to solve that particular problem. This required a significant creative process. I did invent, create and teach in the '578 and '436 patents the steps and mechanisms by which known math could be used to solve a new problem that no one had been able to solve previously.

Pershing Declaration, ¶ 20.

Mr. Pershing explains in paragraphs 20 and 21 that these portions of the '436 Patent are not prior art and the Examiner is invited to read these two paragraphs from his Declaration in detail.

Further, the Office does not provide any reason, rationale or support for various conclusions that quoted sections of the Detailed Description of the Patent are admitted prior art. The Office merely quotes sections of the MPEP and quotes sections of the Detailed Description concluding they are admitted prior art.

While the Office has stated that the language from the claims and Detailed Description of the Patent quoted on pages 53-63 of the Office Action is specifically ***Applicant's*** Admitted Prior Art and not the work of another (although the required reasoning or rationale is not provided by the Office for this conclusion), as shown above, MPEP § 2129 Section I states "***the work of the same inventive entity may not be considered prior art*** against the claims ***unless*** it falls under one of the statutory categories" (emphasis added). However, there is no indication by the Office that the work purported by the Office to be Applicant's Admitted Prior Art falls under one of the statutory categories. Therefore, the work purported by the Office to be Applicant's Admitted Prior Art "***may not be considered prior art*** against the claims" (see MPEP

2129 Section I, *Riverwood Int'l Corp. v. R.A. Jones & Co.*, 324 F.3d 1346 (Fed. Cir. 2003) and *Constant v. Advanced Micro-Devices Inc.*, 848 F.2d 1560 (Fed. Cir. 1988)).

Fifth, since there is no label of anything in the Patent as "prior art" and the Office does not provide any reason, rationale or support for the conclusion that various quoted sections of the Detailed Description are Admitted Prior Art, it appears the Office may somehow be interpreting the particular quoted language from the claims and Detailed Description of the Patent to be ***implied*** admissions of prior art. However, "a finding of obviousness should ***not*** be based on an ***implied*** admission erroneously creating imaginary prior art. That is ***not*** the intent of s 103." *Application of Ehrreich*, 590 F.2d 902, 910 (C.C.P.A. 1979).

Thus, for at least the foregoing reasons, The Office has failed to present even a *prima facie* case that the that the language from the claims and Detailed Description of the Patent quoted on pages 53-63 of the Office Action are Applicant's Admitted Prior Art. Even if such a case has been shown, this response, together with the declaration by Mr. Pershing overcomes this showing the assertion that the material is AAPA should be withdrawn.

For at least the foregoing reasons, Patent owner respectfully requests this rejection of claims 1-5, 7-42 and 46-56 be withdrawn.

E. Rejection of claim 6 under 35 U.S.C. § 103(a) as being unpatentable over EP 966 in view of alleged Applicant's Admitted Prior Art, further in view of Aerodach Website

Claim 6 is rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over EP 966 in view of alleged Applicant's Admitted Prior Art, further in view of Aerodach Website.

Patent owner respectfully traverses the rejections and the allegations of admitted prior art for the reasons previously stated and does not repeat them here to save space.

For at least the foregoing reasons, Patent owner respectfully requests the applicable rejection of claim 6 be withdrawn.

F. New Claims 57-66

Patent owner had added 10 new claims, 57-66. The general content of some of these claims was in broad terms during the interview, notably, claims 63-66, as explained below.

New claims 58 and 60 specify the use of three different views, something which is clearly beyond what is taught in the EP '966 or any other combination of prior art. Claims 58 and 60 cover the correlation of three images, something which is not possible with stereo pairs of images, but which is clearly taught in the '436 Patent, Figures 5A and 5B. Claims 58, 60 and claims dependent thereon are believed allowable and allowance is respectfully requested.

In addition, claim 63 specifies in more clear terms that the markings of pitch values and direction, line colors and meaning are first determined and then displayed to convey certain meanings. This is believed to clearly define these markings in a manner discussed during the interview and suggested by the Examiner. The new claim 63 is therefor along the very lines of the text and language of the interview and should be allowed as discussed.

G. Secondary Considerations of Nonobviousness

The Eagle View story and its nexus with the claimed invention of the '436 and '578 Patents is best told in the Declaration of co-inventor, Chris Pershing, who is the Chief Technical Officer of Eagle View Technologies, Inc., the Patent Owner. The Pershing Declaration should be read at one time as a whole from beginning to end to appreciate the magnitude of his invention's impact on the roof estimation industry. It paints the picture and is evidence of how this foundational and groundbreaking invention revolutionized the way roof measurements were done, and in a matter of just a few years, quickly made the Patent Owner a huge success in the industry directly due to the ingenuity of and great need in the market for the claimed invention. If there is any quintessential example of Patents for which objective indicia of nonobviousness should be considered and given substantial weight, it is the '436 and '578 Patents.

1. Law of Secondary Considerations of Nonobviousness

The legal requirement of giving substantial weight to secondary considerations of nonobviousness is clear as shown below. As shown below, secondary considerations of nonobviousness must be considered and are to be considered highly probative regarding nonobviousness. Although each case below was a panel decision, Judges Rader, Moore, Linn,

Reyna, and O'Malley all agree on the elevation of secondary considerations of nonobviousness. Emphasis below was added.

a. *Apple Inc. v. International Trade Com'n*, 725 F.3d 1356 (Fed Cir 2013). August 7, 2013

This case was held before Moore, Linn, and Reyna. Apple sued Motorola in the ITC alleging that Motorola smartphones and tablets infringe the '607 patent which discloses a multitouch panel with transparent capacitive sensing medium. The ITC found for Motorola, determining that an article describing SmartSkin rendered the claims obvious, and that the Perski '455 patent anticipated the '607 claims. Apple appealed to the Federal Circuit, which reversed the ITC, finding the ITC erred when it did not consider secondary considerations, which were significant. Moore and Linn remanded to ITC for further findings. Reyna dissented and wanted to reverse the ITC, emphasizing the importance of secondary considerations.

- "[I]t is axiomatic that "[t]he establishment of a prima facie case ... is not a conclusion on the ultimate issue of obviousness." Apple Inc. v. Int'l Trade Comm'n, 725 F.3d 1356, 1365 (Fed. Cir. 2013) citing Transocean, 699 F.3d at 1348.
- The ultimate conclusion of obviousness is a legal conclusion to be reached after weighing all the evidence on both sides. Id at 1365.
- "The ITC analyzed only the disclosure of the prior art references and based solely on that evidence determined the claims would have been obvious. We conclude that the ITC's fact findings regarding what the references disclose are supported by substantial evidence. And as the ALJ and the ITC found, the Smartskin reference is very close and expressly recommends as "Conclusions and Directions for Future Work" using transparent ITO electrodes to build a "transparent SmartSkin sensor." J.A. 13603. Indeed, the reference teaches that this transparent sensor could be integrated with "most of today's flat panel displays" because those systems rely on an "active matrix and transparent electrodes." Id. The ITC erred, however, to the extent that it did not analyze the secondary consideration evidence…This error was not harmless. Id at 1365-66.
- ***Secondary considerations*** evidence can ***establish*** that ***"***an ***invention appearing to have been obvious*** in light of the prior art ***was not"*** and may be ***"the most probative*** and ***cogent evidence in the record***." Transocean, 699 F.3d at 1349 (quoting Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d

1530, 1538 (Fed.Cir.1983)). This evidence guards against the use of hindsight because it helps "turn back the clock and place the claims in the context that led to their invention." Mintz, 679 F.3d at 1378. Id at 1366.

- "Apple presented compelling ***secondary considerations evidence*** that may have ***rebutted*** even a ***strong*** showing under the first three Graham factors, and the ITC failed to grapple with it." Id. at 1366
- Apple showed secondary considerations through: (Id. at 1366)

  Evidence of industry praise by business publications

  Evidence of copying.

  A high degree of commercial success
- Apple showed a "nexus between the undisputed commercial success of the iPhone and the patented multitouch functionality, namely evidence that Apple's competitors copied its touchscreen and those in the industry praised the iPhone's multitouch functionality. Id. at 1366.

b. *Leo Pharmaceutical Products, Ltd. v. REA* 726 F.3d 1346 (Fed Cir 2013).

August 12, 2013

This case was held before Rader, O'Malley, and Reyna. Plaintiff appealed from an inter partes re-examination of the '013 patent, where the Board incorrectly found the claimed invention would have been obvious in view of the prior art and incorrectly weighed the objective indicia of nonobviousness. The '013 patent teaches simultaneous treatment with vitamin D and corticosteroids to heal psoriasis faster, however combining these two elements does not result in a storage stable combination. The Board made an obviousness rejection based on three references involving a steroid compensation within a solvent, a vitamin D analog and a corticosteroid, and a composition of the vitamin D analog and a steroid. Furthermore, Board found that objective indicia of nonobviousness did not overcome the prima facie case of obviousness. The Fed Circuit reversed.

- Obviousness is a question of law based on underlying findings of fact. An analysis of obviousness must be based on several factual inquiries: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the art at the time the invention was made; and (4) objective evidence of nonobviousness, if any." Citing In re Kubin, 561 F.3d 1351, 1355 (Fed.Cir.2009); see also

Graham v. John Deere Co., 383 U.S. 1, 17–18, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966). Leo Pharm. Products, Ltd. v. Rea, 726 F.3d 1346, 1353 (Fed. Cir. 2013)

- The ′013 patent, however, is not simply a combination of elements found in the prior art. The inventors of the ′013 patent recognized and solved a problem with the storage stability of certain formulations—a problem that the prior art did not recognize and a problem that was not solved for over a decade. Id. at 1353

- As an initial matter, an invention can often be the recognition of a problem itself. See Cardiac Pacemakers, Inc. v. St. Jude Med., Inc., 381 F.3d 1371, 1377 (Fed.Cir.2004) ("There can of course arise situations wherein identification of the problem is itself the invention."). Id. at 1353.

- The ′013 patent's claimed combination would not have been obvious to try. "[W]here the ***prior art***, at best ***gives only general guidance*** as to the ***particular form*** of the claimed invention or ***how to achieve*** it, relying on ***an obvious-to-try theory*** to support an obviousness finding is ***impermissible***." In re Cyclobenzaprine Hydrochloride Extended–Release Capsule Patent Litigation, 676 F.3d 1063, 1073 (Fed.Cir.2012) (internal citations and quotation marks omitted). Further, "KSR did not create a presumption that all experimentation in fields where there is already a background of useful knowledge is 'obvious to try,' without considering the nature of the science or technology." Abbott Labs. v. Sandoz, Inc., 544 F.3d 1341, 1352 (Fed.Cir.2008). Id. at 1356

- Objective ***indicia of nonobviousness*** play a ***critical role*** in the obviousness analysis. They are "***not just a cumulative or confirmatory*** part of the obviousness calculus but ***constitute***[ ] ***independent evidence of nonobviousness***." Ortho–McNeil Pharm., Inc. v. Mylan Labs., Inc., 520 F.3d 1358, 1365 (Fed.Cir.2008). id. at 1358.

- Objective indicia "can be the most probative evidence of nonobviousness in the record, and enables the court to avert the trap of hindsight." Crocs, Inc. v. Int'l Trade Comm'n, 598 F.3d 1294, 1310 (Fed.Cir.2010) (internal quotation marks omitted). Here, the objective indicia of nonobviousness are crucial in avoiding the trap of hindsight when reviewing, what otherwise seems like, a combination of known elements. Id. at 1358.

- Leo Pharmaceuticals provided other objective indicia of non-obviousness. For example, the commercial success of Leo Pharmaceutical's Taclonex® ointment is a testament to the improved properties of the ′013 patent's claimed invention. Taclonex® is the first FDA-approved drug to combine vitamin D and corticosteroids into a single formulation for topical application. While FDA approval is not determinative of nonobviousness, it can be relevant in evaluating the objective indicia of nonobviousness.

See Knoll Pharm. Co., Inc. v. Teva. Pharm. USA, Inc., 367 F.3d 1381, 1385 (Fed.Cir.2004). Id. at 1358.

- The ***record also shows evidence of long felt but unsolved need***, i.e., the need for a single formulation to treat psoriasis. The length of the intervening time between the publication dates of the prior art and the claimed invention can also qualify as an objective indicator of nonobviousness. See Ecolochem, Inc. v. S. Cal. Edison Co., 227 F.3d 1361, 1376–77 (Fed.Cir.2000). Id. at 1359.

- Here, the ***objective indicia***—taken in sum—are the ***most*** "***probative evidence of nonobviousness*** ... enabl[ing] the court to avert the trap of hindsight." Crocs, Inc., 598 F.3d at 1310. Viewed through the lens of the objective indicia, as opposed to the hindsight lens used by the Board, the '013 patent would not have been not obvious over Turi in combination with Dikstein or Serup. Therefore, this court reverses the Board's obviousness determination. Id. at 1359.

c. *Rambus Inc. v. REA* 2013 WL 5312505 (Fed Cir. 2013) September 24, 2013; A Case About "Nexus"

This case was held before Moore, Linn, and O'Malley. Plaintiff applicant appealed the decision of the Be PAI which sustained PTO examiners rejection of claims on re-examination of the patent for a method of controlling a synchronous memory device. The Board found that 2 references, an Intel iAPX manual and an unexamined Japanese patent "Inagaki." The references and patent in question deal with clocking schemes to transfer bits. The Fed Circuit reversed the rejection and remanded.

- ***[O]bjective evidence can establish that "an invention appearing to have been obvious in light of the prior art was not***." Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1538 (Fed.Cir.1983). In some cases, that evidence is "***the most probative and cogent evidence*** in the record." Id. It helps "***turn back the clock and place the claims in the context that led to their invention***." Mintz v. Dietz & Watson, Inc., 679 F.3d 1372, 1378 (Fed.Cir.2012). "For objective evidence ... to be accorded ***substantial weight***, its proponent must establish a ***nexus between the evidence and the merits of the claimed invention***." In re Kao, 639 F.3d 1057, 1068 (Fed.Cir.2011) (quoting Wyers v. Master Lock Co., 616 F.3d 1231, 1246 (Fed.Cir.2010)) (emphasis omitted) (internal quotation marks omitted). Rambus Inc. v. Rea, 2012-1634, 2013 WL 5312505 (Fed. Cir. Sept. 24, 2013)

- Objective evidence of nonobviousness ***need only be "reasonably commensurate with the scope of the claims***," and we ***do not require*** a patentee to produce objective evidence of nonobviousness ***for every potential embodiment*** of the claim. Kao, 639 F.3d at 1068; In re Glatt Air Techniques, Inc., 630 F.3d 1026, 1030 (Fed.Cir.2011) ("[W]e have consistently held that a patent applicant 'need not sell every conceivable embodiment of the claims in order to rely upon evidence of commercial success.' ") (quoting In re DBC, 545 F.3d 1373, 1384 (Fed.Cir.2008)). Id. at 8.

- Board found reasons that the Nexus for Objective considerations were met: Publication said that Fujitsu, NEC and Toshiba paid "substantial license fees to participate"

Furthermore, the MPEP states:

> Objective evidence relevant to the issue of obviousness ***must*** be evaluated by Office personnel. Id. at 17-18, 148 USPQ at 467. Such evidence, sometimes referred to as "secondary considerations," may include ***evidence of commercial success, long-felt but unsolved needs, failure of others, and unexpected results***.
>
> MPEP 2141 Section II (emphasis added); Graham v. John Deere Co., 383 U.S. 1 at 17-18 (1966)

Nexus between the Claimed invention on the Secondary considerations.

The Pershing Declaration provides evidence that the invention of the '436 Patent has a nexus with several secondary considerations that weight strongly in favor of the patentability. The Examiner is requested to review the Pershing Declaration in detail for these facts.

The Pershing declaration shows a nexus between the invention claimed herein and the secondary considerations. It was the inventive feature of being able to produce accurate roof reports based solely on the image files that resulted in the so many of the secondary considerations being strongly in favor of patentability. One of the inventive features is the ability to use existing top plan images of locations and oblique perspective view together to create a roof report. It was this feature that others had not been able to do until Pershing showed them how, see paragraphs 8 and 9. It was this feature that opened up an existing library of images that were ready for use by the invention of the '436 Patent but had found only limited use prior to this date. This solved a long felt need in the art of roof repair estimates, a costly and dangerous problem for many years. It was this feature that others who had had full access to

these images for many years, for example Pictometry, did not know how to solve until Pershing showed them the way with his invention disclosed in the '436 Patent Application. People in the insurance claims business, for example Xactware, had tried and failed to achieve this result and did not know how until Mr. Pershing solved the problem. This shows failure by others, despite having both the motivation and the resources. In addition to the above, the invention created by the '578 Patent resulted in the foundation of an entirely new company, started in Mr. Pershing's basement, from scratch. It went from having a few employees and low sales to having about $50 million in sales in just 5 years.

The strong nexus between the invention and the sales increase is shown by a number of factors. First, the product covered by the '436 Patent was 100% of all their sales for the first several months and then became and remains about 95% of all revenue. Rarely does a company have the evidence to show that one product covered by its patent has this specific increase in sales over many years, see paragraph 13 of the Pershing declaration. Besides the fact that the product sold is made using the claimed features, a second way the nexus is shown is that it is the features of the claim, namely the ability to produce a roof report using only image files, that makes this product even possible and also available at such a low, reasonable price.

Establishing a nexus between the secondary considerations and the claimed features is made easier in this situation because it is the claimed features that make this product possible to produce and that opens up an existing library of images that could not be used unless the roof reports could be made using only the image files themselves.

There has been significant industry praise for the product produced by this claimed invention as shown by Mr. Pershing in his declaration, paragraph 14, 15 and 16 of his declaration. It is noted that same product practices both the '436 and the '578 patents, accordingly the nexus would be common for both patents on the secondary considerations.

2. Evidence of Long-felt But Unsolved Needs

The Pershing Declaration attached hereto is evidence that shows a long-felt, but unsolved need in the construction and insurance industries for a solution to cut down on costs and increase efficiency and safety of roof estimating. Aerial images of roofs had been just sitting

available in existing commonplace imagery databases for many years, but nobody had thought to, or could figure out how to, practically utilize these available images to solve this problem of the high cost and inefficiency of climbing on roofs to do roof estimations until Chris Pershing and his co-inventor came along:

> 2. …Sometime in the second half of 2006, I had a conversation with David P. Carlson, the other listed inventor, regarding whether it would be possible to obtain specific measurements of a roof without having to climb on the roof. I speculated that a ***solution*** to that problem might be found by ***utilizing aerial and satellite imagery that had become widely available through Google, Microsoft Live (now Bing Maps), USGS, and like services***. The overhead views, also called the top plan view or orthogonal view in the image files I could obtain had a scale reference that provided a mechanism to convert a pixel distance in the image to a physical distance in feet or meters. With that scale reference, one could calculate the length of a line near-to and parallel-to the ground as well as an area of a polygon in the plane of the ground for the overhead image. However, the image files ***did not provide information to allow someone to determine the depth (e.g., distances perpendicular to the image viewpoint***). Further the oblique images, sometimes call oblique perspective images or perspective images did not usually have scale information at all, or if they had it, it was of limited use. I wondered whether, ***without being given specific information about how the image was acquired and details about the camera position when the image was taken*** it would be possible to determine the pitch of sloped roof sections. I concluded that without a determination of the pitch of the roof sections, an accurate assessment of the surface area and the length of sloped edges and seams on the roof could not be achieved.

Pershing Declaration, ¶ 2 (emphasis added).

Note the ***nexus existing between the evidence above and the merits of the claimed inventions*** of the '578 Patents and the '436 Patent. The claimed invention of the '578 Patent is directed to determining roof measurements "based solely on the image files" and the long felt need presented was exactly for that. In other words, one long felt, but unsolved need was for a solution of how to determine roof measurements based solely on the image files of these existing imagery databases ***without having the specific information about how the image was acquired and details about the camera position when the image was taken***. Similarly, the claimed invention of the '436 Patent is directed to determining roof measurements of roofs in images that have disparate types of views of the roof such as those available at the time to the general public in the existing aerial imagery databases that, unlike stereoscopic pairs of images,

do ***not*** have the ***specific information about how the image was acquired and details about the camera position when the image was taken***. The claimed invention fulfilled this long felt need by providing a solution to remotely determine roof measurements based on image files available from image libraries that had been accumulating by these multiple image providers over many years. In particular the Pershing Declaration states in paragraph 3 (emphasis added):

> 3. ***As I studied the problem*** I also realized that if the pitch of the various roof sections could be reliably and accurately determined from an analysis of two more unrelated images, a vast and readily available library of imagery covering the United States could be successfully leveraged to provide a viable remote roof measurement solution. The ability to successfully leverage available image libraries that had been ***accumulated*** by multiple image providers ***over many years*** would be a ***significant achievement and a great advance*** in the field of roof measurements, if I were able to figure out how to do this.

As evidenced by Eagle View's aggressive growth in business volume and reaction in the marketplace once the product encompassed by the claims of the '578 and '436 Patents was released, the method solved an important and valuable overall problem in the roofing and insurance industries of the high cost and inefficiency of climbing on roofs to do roof estimations that had been present basically since roof repair had existed. This, of course, is a very long time. This aggressive growth in business volume and reaction in the marketplace is evidenced by the entire Pershing Declaration and attached Pershing Exhibits, and is shown in more detail below with respect to the discussion of the commercial success indicia, a relevant portion of which states:

> 5. The method that resulted from this prototyping and an example of the end-product is taught in the body and figures of the '578 Patent. This method was inventive. As ***evidenced by our aggressive growth in business volume***, the method ***solved an important and valuable problem in the roofing and insurance industries***. As evidenced by the ***reaction in the marketplace***, the method was unexpected and unanticipated to the industries we serve as well as providers of software packages and aerial imagery that service those same industries. As ***evidenced by our humble beginnings*** from starting a ***brand new company*** from scratch for which ***this was the only product*** and the growing business success of EagleView, the economic benefits of leveraging ***commonplace imagery*** provided a working solution to an otherwise unworkably expensive problem.

Pershing Declaration, ¶ 5 (emphasis added).

As further evidence of the ***nexus*** here between the evidence above and the merits of the claimed inventions of the '578 Patents and the '436 Patent, the product that was encompassed by the claims of the '578 Patents and the '436 Patents, was Eagle View's ***only product***, as shown above, and Eagle View was a small startup, even invoking the help of family members, obviously without a sizable marketing budget. Thus, there is no other apparent reason or excuse for the reaction in the marketplace toward Eagle View's aggressive growth in business volume and overall large commercial success, other than that the solution was fulfilling a significant long felt but unsolved need in the market for such a solution. This same nexus reasoning also applies to the other related objective indicia of non-obviousness below, especially with respect to commercial success. This is because commercial success is a likely indication or result of a long-felt need in the market being fulfilled (e.g., an untapped demand being met). Thus, if no other reason for the commercial success is apparent, commercial success may contribute as evidence of a long felt but unsolved need being fulfilled by the product encompassed by the claims.

The market reaction and aggressive growth is further evidenced in the excerpt from the Pershing Declaration below:

> 6. We officially launched the product in the last week of January 2008 with an email blast to many in the roofing business and asking them to try our service to provide them detailed roof reports of any address they provided to us in the United States. ***Within the first hour on the first day we announced our service***, our phone began to ring, with people asking to buy the roof reports that were the product of the invention described in what became the '578 and '436 Patents. The reception in the industry was ***nothing short of amazing***. Over the weeks that followed, our wives volunteered their time answering phones, assembling more desks, and helping to find and interview the staff we needed to meet the rising tide of interest. ***Four months later, we had outgrown the size and infrastructure of our temporary office space***, and found something bigger to accommodate our growth.

Pershing Declaration, ¶ 6 (emphasis added).

3. Evidence of Failure of Others

The Pershing Declaration evidences the failure of others to independently invent the claimed inventions of the '578 and '436 Patents without having the benefit of having read the patent application or patent:

> 8. The buzz we created within the roofing contractor community soon caught the attention of insurance companies and software companies that service the insurance industry. Once such software company, Xactware, is a dominant provider of claims routing and adjusting software that services many of the nation's top insurance companies. We were invited to their headquarters just a couple of months after opening our doors. They were impressed with our product and ***stated they had previously failed at an internal effort to figure out how to use such imagery to remotely measure features in pitched roofs***. They subsequently entered into a contract with us to use roof reports we produced in large quantities. At the time of the first meeting in early 2008 I had not shown them the patent application that resulted in the '578 patent which we had previously filed but which had not yet published, so they ***were not able to read the Application that became the*** '578 Patent ***to see how we achieved this***.
>
> 9. Another company, Pictometry International, invited us out to their headquarters in the fall of 2008. We were customers in buying their oblique imagery product and they noticed we were buying more and more images from them. They saw that our product was rapidly making progress penetrating into use by the insurance industry – an industry that ***Pictometry had been struggling with finding success with over a period of years***. Even though Pictometry was the supplier of our oblique imagery, they too ***were wondering with the 'how did you do that?' question*** with regard to our ability to ***accurately determine pitch and 3D roof models using the photos they were selling to us***. When they sold their images, they intentionally removed from them nearly all the metadata collected at the time the image was taken, including all camera data and image acquisition data…

Pershing Declaration, ¶¶ 8 and 9 (emphasis added).

As shown above, Pershing was able to ingeniously overcome the problem of how to determine pitch based solely on the image files, or based on non-stereoscopic pairs of images, which have two different types of views and thus no associated camera position data. Try as they might, others could not do so without the benefit of having read the '578 or '436 Patent, or their respective patent applications. It just so happens that a main feature or merit of the claimed invention of the '578 and '436 Patents is that it determines estimated roof pitch from such images and thus the roof report with needed measurements can be provided. This shows a nexus

between the merits of the claimed invention and the evidence provided above of the failure of others.

4. Skepticism of others

The Pershing Declaration evidences the skepticism of others regarding whether the claimed inventions of the '578 and '436 Patents was even possible.

> 7. Our first and largest initial challenge in the marketplace was to prove that we were 'real'. Many of the initial contacts with contractors and companies were met with ***deep skepticism*** about our claim to be able to remotely and accurately measure the correct pitch and area of roofs from photographs obtained from commercially available image databases, such as Bing and Pictometry. In ***an attempt to debunk our claims***, many early customers followed our first conversation by sending in an address of a particularly difficult roof that they had recently measured by hand. Upon receiving and validating the reports against their own measurements and finding that our reports were accurate, the conversation changed to something to the effect of: "***that was amazing, we are surprised*** you were able to do this."
>
> …
>
> …The remaining metadata included only geolocation and image scale data in the orthographic images and only geolocation and approximate compass orientation of the oblique images that differentiated the East, West, North, and South looking viewpoints. This is equivalent in substance to the minimal metadata they allowed Microsoft to present to end users of the "Bird's eye" imagery in the form of visual scale markers and an indication of East, West, North, South viewpoint directions. ***Pictometry had believed that by removing nearly all metadata from the image files, a person would not be able to make use of unrelated images to recreate a 3D model of the roof***. To paraphrase, the comment from one of their executives was that we '***shouldn't have the ability to do that' with what they knew they were providing to us in the image file***s. To my knowledge, they had not, at that time, seen the '578 Patent application which was not published until October 2008 and I did not show it to them at that time.

Pershing Declaration, ¶¶ 7 and 9 (emphasis added).

As shown above, others in the industry were highly skeptical, or didn't think roof measurements from raw or disparate aerial imagery such as encompassed by the claims of the patent could even be achieved. Eagle View had to prove themselves from the very start because the industry felt Eagle View's product needed to be "debunked."

5. Unexpected results

The skepticism was eventually replaced by amazement in the industry with the success and accuracy of the process and resulting roof estimate reports encompassed by the claims of the '436 and '578 Patents. As shown in the emphasized text in the excerpts above and below from the Pershing Declaration, Eagle View's customers and the industry as a whole and even Eagle View were taken by surprise by the accuracy and reliability of the process, systems and resulting reports encompassed by the claims of the '436 and '578 Patents.

> 7. Our first and largest initial challenge in the marketplace was to prove that we were 'real'. Many of the initial contacts with contractors and companies were met with ***deep skepticism*** about our claim to be able to remotely and accurately measure the correct pitch and area of roofs from photographs obtained from commercially available image databases, such as Bing and Pictometry. In ***an attempt to debunk our claims***, many early customers followed our first conversation by sending in an address of a particularly difficult roof that they had recently measured by hand. Upon receiving and validating the reports against their own measurements and finding that our reports were accurate, the conversation changed to something to the effect of: "t***hat was amazing, we are surprised*** you were able to do this."
>
> …
>
> 10. One reason they were ***very surprised*** is because we were able to achieve these ***unexpected results*** and produce the final reports ***based solely on using the image data files.*** We obtained no other information other than what we got from the ***unrelated, independently taken images*** and without an on-site visit to measure any actual roof properties.
>
> 11. Another unproven goal of the invention at the time of launch was to produce remote measurement results that were comparably accurate compared to the accepted manual roof measurement practices. To our surprise, we would soon learn that, on average, we were not only competitive with the existing manual measurement accuracy; our results were far more accurate and repeatable. In contrast to the smaller roofing contractors who were testing our product, insurance companies approached their testing with much more statistical rigor and with much larger test samples. It was not uncommon for an insurance company to conduct a test involving many hundreds of roofs across the country – sometime by ordering those roof reports anonymously under a false company name to shield us from knowing the scope or recipient of the testing. The results from several such tests from different insurance companies were consistently similar: The area reported on EagleView's measurement reports typically fell within 1% to 2% of what they determined to be the actual value obtained by a through their own on-site verification at each of the targeted buildings. In contrast, previous similar

> studies of crews performing manual roof measurements found that the manual methods resulted in an average difference of 6%– 10%. Thus, in addition to streamlining business practices, having a professional looking product, and reducing time and injury risk spent on a roof, the EagleView reports produced by this invention replaced manual roof area estimates with a significantly more accurate result.

Pershing Declaration, ¶¶ 7, 10 and 11 (emphasis added).

Note above the features of producing the final reports based solely on using the image data files and determining accurate measurements having obtained no other information other than what Eagle View got from the unrelated, independently taken images. This is without an on-site visit to measure any actual roof properties. These abilities or features are what caused the surprise and are also particular merits of the product encompassed by the claimed inventions of the 436 and '578 Patents. This provides a strong nexus between the evidence above and the merits of the claimed inventions.

6. Evidence of A High Degree of Commercial Success

As shown above, the product provided by Eagle View was fulfilling a long felt, but unsolved, need in the market as soon as it was released. This caused a great, almost immediate, commercial success for Eagle View due to the merits of the product that are particularly encompassed by the claimed inventions of the '436 and '578 Patents. Namely, such merits are, with respect to the '578 Patent, being able to determine roof measurements based solely on the image files of these existing imagery databases without having the specific information about how the image was acquired and details about the camera position when the image was taken. With respect to the '436 Patent, the merits are being able to determine roof measurements of roofs in images that have disparate types of views of the roof such as those available at the time in the commonplace aerial imagery databases that, unlike stereoscopic pairs of images, do not have the specific information about how the image was acquired and details about the camera position when the image was taken. This caused the Eagle View product to quickly become an industry standard and resulted in the aggressive growth of Eagle View, skyrocketing Eagle View to the top of the roof measurement industry as shown in the

Declaration of Chris Pershing and associated publications, testimonials and case studies which are attached as Exhibits to, and form part of, the Pershing Declaration:

> 12. As evidenced by the recognized ***growth of the volume of our business***, the ***growth of our employee head count***, and the numerous ***testimonials*** and ***articles*** attesting to the impact we have made within the industries we service, this invention has proven its uniqueness and value to the world. I will summarize these in the following paragraphs.
>
> 13. Just a few days before our January 2008 launch, the other co-inventor, David P. Carlson and myself hired and began training our first few employees. - At the time of we launched our service, the only product we sold was the product described and claimed in the '578 and '436 Patents, namely, a report that had included on it the values we have determined for the roof area, the pitch and the length of various roof edges, valleys and ridges. Thus, ***100% of the initial sales were directly for the product that is claimed in many of the claims of these two patents.*** In Fiscal Year 2008, our revenue for this product was about $1.4 million. As of December 31, 2008, our employee head count was 56. ***We thus grew from the first few employees hired in January 2008 to 56 employees at year's end. In the FY 2009, our revenue was over $5.3 million*** for this product, close to quadrupling for the prior year and our employee count at the end of the year was 69. ***In FY 2010, our revenue exceeded $12 million for this product,*** a doubling from the prior year and our employee count had grown to 105. By the end of FY 2010, many large insurance companies became convinced that our reports had data and measurements that were superior in many ways to measurements they could obtain other places and began to purchase more roof reports from us. As a result, in ***FY 2011 we had revenue of greater than $33 million from this product, almost triple from the prior year and in FY 2012 our revenue was more than $45*** million from this product, another year of significant growth. In 2011 we ended with 161 employees and this stayed about the same through 2012. In reporting the above numbers the stated revenue resulted from the sale of the claimed inventions, namely, a roof report having the determined measurements on it as specified in the '578 and '436 Patents. ***With respect to the*** '436 Patent***, these reports were made from images that included a top plan view and an oblique perspective view and also included different colors of lines for different roof properties, such as red for ridge lines and light blue for valley lines. The edges were also a different color, for example green or dark blue. The pitch was indicated on the roof reports as well with an arrow showing the direction of the pitch. The orientation of the pitch arrow is relative to the compass rose indicated on the page which may or may not have the North direction aligned with orientation of the page.***

Pershing Declaration, ¶¶ 12 and 13 (emphasis added).

As further evidence of the ***nexus*** here between the evidence above and the merits of the claimed inventions of the '578 Patents and the '436 Patent, the product that was encompassed by the claims of the '578 Patents and the '436 Patents, was Eagle View's ***only product***, as shown above, and Eagle View started as a small startup with just a few employees, obviously without a huge marketing budget. Thus, there is no other apparent reason or excuse for the reaction in the marketplace, Eagle View's aggressive growth in business volume, and overall large commercial success than "from the sale of the claimed inventions, namely, a roof report having the determined measurements on it as specified in the '578 and '436 Patents"

7. Evidence of Industry Praise

As a result of not only the commercial success, but also the merits of the product embodying the claimed inventions of the 578 and '436 Patents, there has been much industry praise for Eagle View and its product. The excerpts below evidence this, but the Examiner is invited to look at the Pershing Exhibits provided as part of the Pershing Declaration which are publications, articles and testimonials including praise for the product of Eagle View embodying the claimed inventions of the 578 and '436 Patents and its benefits:

> 14. There have been significant publications in various press sources that have touted our success. I attach hereto as ***Pershing Exhibits A and B*** some of those articles. During the Examiner's interview held on Oct. 17, 2013, we discussed the article in CNNMoney by Jennifer Alsever and a full copy is enclosed as Pershing Exhibit A for the Examiner's detailed review. We also discussed the article in Bloomberg by John Tozzi and a full copy is enclosed as Pershing Exhibit B. The Examiner can review these two articles in detail and I will quote only a few sections from each of them. In the CNNMoney publication, Kirk Belz is cited for the statements of: "***Having an Eagle View report has become an accepted industry standard***." He also states that ***he can process 25% more claims each day using these reports, all without sending an adjustor onto the roof***, which saves the adjustor 45 min per roof and avoids the dangerous job of climbing on the roof. In the Bloomberg article, Joe Graham is cited for stating that with respect to Eagle View roof reports, "***most insurance carriers at this point treat it as gospel***."
>
> 15. An articles authored by Chris King, titled "Bird's-Eye View illustrates the response in the industry from the early launch, having been published in August 2009, attached as ***Pershing Exhibits C***. This article is also by an author independent from EagleView and shows recognition in the industry of the

> benefits that were obtained by the claimed invention of the '578 and '436 Patents. The Examiner is inv[i]ted to review the entire article and I will only quote herein from one location near the end. Troy Mock, President of BRM roofing states: "I've been with them since the beginning, and thing really picked up since February of last year." He states that he had them shoot 100 roofs due to a recent hail storm in Houston. The article states, " '***The bottom line is that this would help every roofing contractor***,' said Mock. 'The number one reason is liability-you don't ***have to have salesmen climbing on the roof, hurting themselves or damaging the roof***.' " Another briefer article is also attached by Jeff Bond, Pershing Exhibit D that explains the benefits of the inventive reports.
>
> 16. There are a number of other articles attached as ***Pershing Exhibits E-H*** which have were authored by Eagle View employees and printed in various magazines. For example, two of the authors list are Karen Edwards and Heidi Ellsworth, both of whom were employees of Eagle View at the time they wrote the articles and thus the authors were not independent from the patent owner and company selling the inventive reports. The ***articles do contain information about the industry acceptance of the EagleView roof reports as well as comments by many in the Roofing Industry regarding their views on these reports*** and therefore have value in showing both the tremendous benefits of the invention and the acceptance in the industry. Also attached are case studies as Pershing Exhibits I-N that were prepared by Eagle View employees that were specific case studies on the benefits of using Eagle View reports that were produced by the process and system covered in the'578 and '436 Patents.

Pershing Declaration, ¶¶ 14-16 (emphasis added).

8. Evidence of Copying

The product embodying the claimed inventions of the 578 and '436 Patents was so commercially successful and had so much merit that others almost immediately began copying the invention, apparently as soon as they were able to get their hands on the published patent applications for the '578 and '436 Patents:

> 19. In fact, the industry showed that some months ***after our applications were published***, a number of ***copy-cat companies started-up*** and created ***nearly identical reports and began selling them in competition with us***. I had not given them my source code and yet by having access to our end reports, a real example of which I provided in the patent and what other information they were able to glean from the press and the '578 published patent application, they were able to imitate my results. Of course, I don't know the things the competitors studied to copy our product since they didn't contact me when they did so, but what I do know is that they ***made look-a like reports sometime after the*** '578 ***application was published***, so I believe that there was sufficient information included that

> would permit another person to make and use the invention as claimed. The companies who imitated our products, many of whom to which we have sent notice letters include ***RoofWalk***, ***GeoEstimator***, ***Skytek Imaging***, ***Aerialogics***, ***Roofs411*** and ***ConnectPoint***. This is evidence not only that they could create such reports, but also evidence that sometime after we started this business with an entire new product, others decided to imitate our product.

Thus, not only are the claims of the '436 and '578 Patents nonobvious because the Items of Information, alone or in combination, do not teach or suggest all the claimed elements, but, just as importantly, because of the secondary considerations of nonobviousness provided above as evidenced by the Pershing Declaration and attached Pershing Exhibits. Therefore, even if the one or more of the claims of the '436 and '578 Patents appear to the Office to be obvious in light of the Items of Information, they are in fact not obvious due to the substantial secondary considerations of nonobvioussness noted above and the nexus shown above between the merits of the claimed inventions of the '436 and '578 Patents and the evidence providing the secondary considerations of nonobviousness herein.

Conclusion

Patent Owner respectfully submits that the claims of the Patent are in condition for allowance. Any remarks in support of patentability of one claim should not be imputed to any other claim, even if similar terminology is used. Any remarks referring to only a portion of a claim should not be understood to base patentability on that portion; rather, patentability must rest on each claim taken as a whole. A number of clarifying amendments have also been made to the above claim set. Patent Owner does not acquiesce to each of the Examiner's rejections and to each of the Examiner's assertions regarding what the cited references show or teach, even if not expressly discussed herein. Although changes to the claims have been made, no acquiescence or estoppel is or should be implied thereby; such amendments are made only to expedite prosecution of the present reexamination and are without prejudice to the presentation or assertion, in the future, of claims relating to the same or similar subject matter.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19 1090.

All of the claims remaining in the Patent under reexamination are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

STATEMENT per 37 C.F.R. § 1.530(e)

Claim	Status (Pending or Canceled)	Support in Disclosure
1 (Amended)	Pending	Col 4, lines 9-11 and Col. 5, lines 52-57;
2	Pending	
3	Pending	
4	Pending	
5	Pending	
6	Pending	
7	Pending	
8	Pending	
9	Pending	
10	Pending	
11	Pending	
12	Pending	
13	Pending	
14	Pending	
15	Pending	
16	Pending	
17	Pending	
18 (Amended)	Pending	Col 4, lines 9-11 and Col. 5, lines 52-57;
19	Pending	
20	Pending	
21	Pending	
22	Pending	
23	Pending	
24	Pending	
25	Pending	
26	Pending	
27	Pending	
28	Pending	
29	Pending	
30	Pending	
31	Pending	
32	Pending	
33	Pending	
34	Pending	

35	Pending	
36 (Amended)	Pending	Col 3, lines 65-67; Col 4, lines 1-2; lines 9-11 and Col. 5, lines 52-57; Abstract, as amended; Col 6, lines 50-54; lines 63-67; Col 7, lines 1-11;
37 (Amended)	Pending	Col 6, lines 50-54
38	Pending	
39	Pending	
39	Pending	
40	Pending	
41 (Amended)	Pending	Col 3, line 67; Col 4, lines 1-2; lines 21-23; lines 48-52; Col 5, lines 9-12.
42	Pending	
43	Canceled	
44	Canceled	
45	Canceled	
46	Pending	
47	Pending	
48	Pending	
49	Pending	
50	Pending	
51	Pending	
52	Pending	
53	Pending	
54	Pending	
55	Pending	
56	Pending	
57 (New)	Pending	Abstract, as amended
58 (New)	Pending	Abstract, as amended; Col. 4, lines 8-11; Col. 5, lines 52-56; Col. 6, lines 12-67; Col 7, lines 12-18
59 (New)	Pending	Figure 5C; Col. 5, lines 57-61
60 (New)	Pending	Col 3, lines 65-67; Col 4, lines 1-2; lines 9-11 and Col. 5, lines 52-67; Abstract, as amended; Col 6, lines 50-54; lines 63-67; Col 7, lines 1-9
61 (New)	Pending	Col 6, lines 50-67
62 (New)	Pending	Col 6, lines 50-67; Col 7, lines 1-9
63 (New)	Pending	Col 3, lines 65-67; Col 4, lines 1-2; lines 9-11 and Col. 5, lines 52-67; Abstract, as amended; Col 6, lines 1-16; lines 50-67; lines 63-67; Col 7, lines 1-9
64 (New)	Pending	Figure 5D; Col 5, lines 61-67 and Col. 6, lines 1-6
65 (New)	Pending	Figure 5C; Figure 5D; Col 5, lines 52-67 and Col. 6, lines 1-6
66 (New)	Pending	Col. 6; lines 50-67; Col. 7, lines 1-9

Respectfully submitted,

SEED Intellectual Property Law Group PLLC

/David V. Carlson/
David V. Carlson
Registration No. 31,153

DVC:jks

Attachments:

Attachment 1:	Eagle View Presentation provided at Examiner Interview held on 10/17/13
Attachment 2:	Pershing Declaration including Pershing Exhibits A-O
Attachment 3:	Curless Declaration including Curless Exhibit A
Attachment 4:	Jones Declaration including Jones Exhibit A
Attachment 5:	Consent Decree and Dismissal – Eagle View v. Roofwalk

701 Fifth Avenue, Suite 5400
Seattle, Washington 98104-7092
Phone: (206) 622-4900
Fax: (206) 682-6031

2814677_1.DOC

ATTACHMENT 1

(96/000,004 - 290115.401C1RE)



U.S. Patent No. 8,145,578

EX2018 / IPR2022-00734 / Page 139 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Chris Pershing

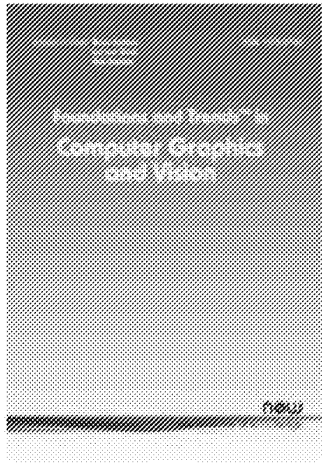


- B.S. Engineering Physics 1994, University of Arizona
- Masters in Physics 1996, University of Arizona
- Two years in a PhD program in biomedical Engineering
- Industry experience in software development including surface analysis of 3D surface microstructures and biomedical equipment
- Worked at Microsoft, Phillips Medical, among others

EX2018 / IPR2022-00734 / Page 140 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Brian Curless

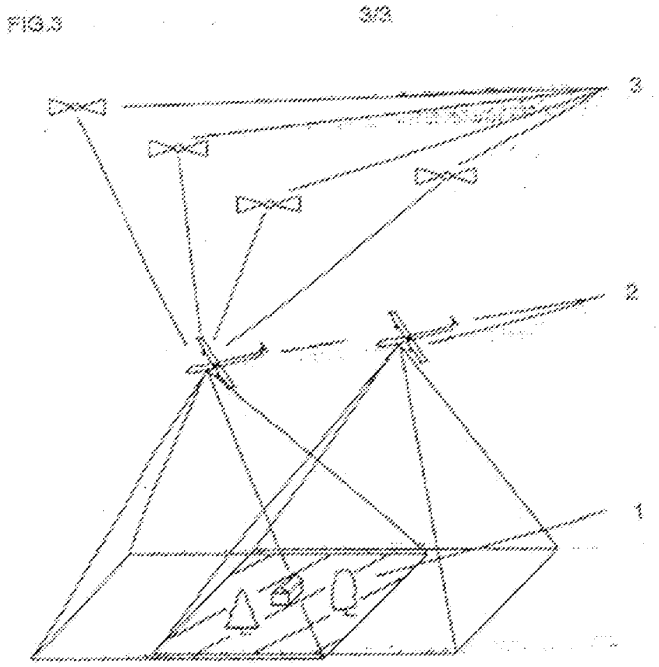
- Professor, University of Washington, Department of Computer Science & Engineering
- Stanford University, Ph.D. E.E. 1997
- Stanford University, M.S.E.E. 1991
- University of Texas at Austin, B.S.E.E. 1988
- Published over 60 articles and conference papers in the field of Computer Graphics and Vision
- Co-editor-in-chief of Foundations and Trends in Computer Graphics and Vision



EX2018 / IPR2022-00734 / Page 141 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Background

- Stereoscopic image acquisition
- Camera locations known
- Relatively expensive
  - Special equipment
  - Dedicated flights



EX2018 / IPR2022-00734 / Page 142 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Background

(a) Left image



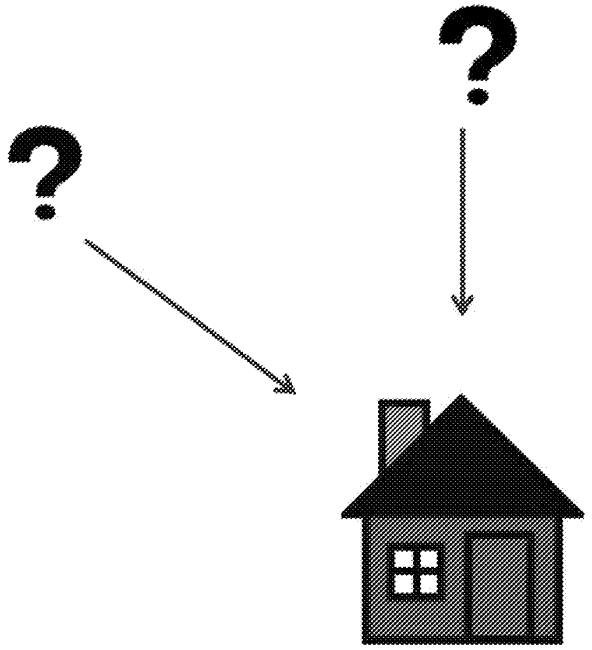
(b) Right image



EX2018 / IPR2022-00734 / Page 143 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

The Invention

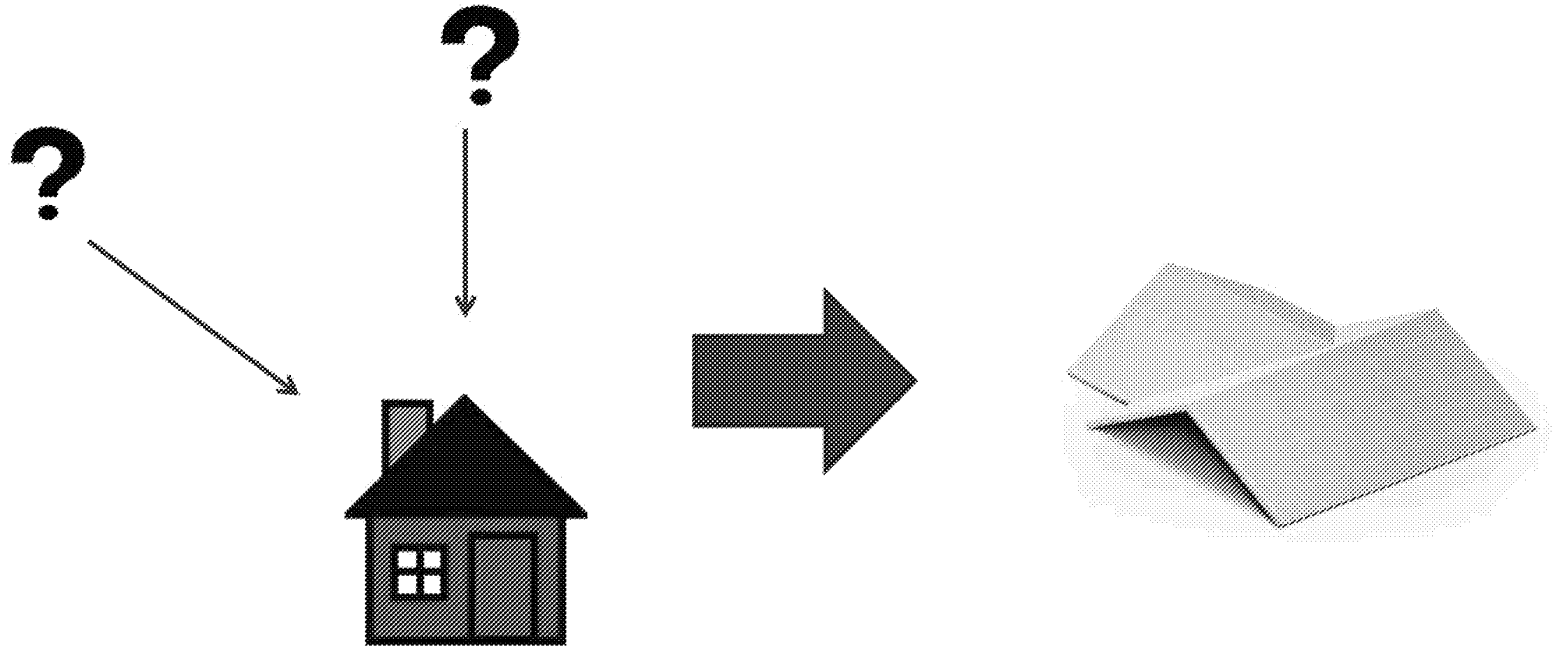
- Two independent images
- Camera locations **unknown**
- Use publicly available pictures
- One or more oblique views
- One orthogonal / downward looking



EX2018 / IPR2022-00734 / Page 144 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

The Challenge

Transform two (or more) aerial pictures taken from **unknown** positions into accurate 3D roof measurements?



EX2018 / IPR2022-00734 / Page 145 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Was it Possible?



EX2018 / IPR2022-00734 / Page 146 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

"[That] Shouldn't be Possible"

- Inventor Chris Pershing meets with Pictometry International, then the primary supplier of oblique aerial images, in Fall of 2008
- Pictometry executive comments that "it shouldn't be possible" to derive accurate roof pitch measurements from the provided oblique images

Pictometry intelligent images

- Executive from XactWare, the primary supplier of claims processing software, likewise commented that XactWare was "not able to figure out" how to do this

XACTWARE.

EX2018 / IPR2022-00734 / Page 147 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

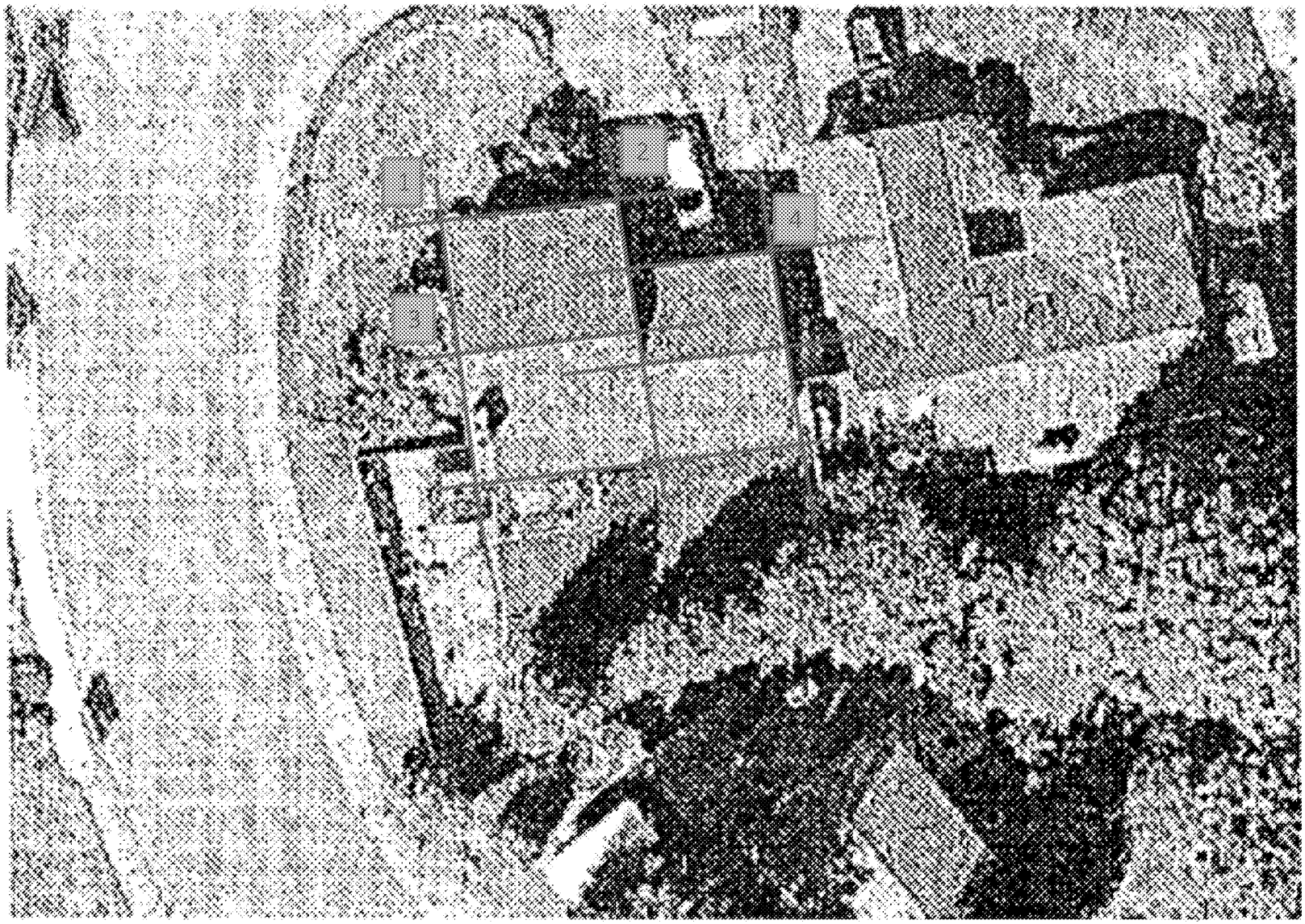
The Solution

- Identify reference points
- Coregister the images using reference points
- Reconstruct the 3D geometry
- Pershing's source code not disclosed

A set of reference points are identified in each of the images. The service's measurement software then uses these reference points and some proprietary algorithms to co-register the images and reconstruct the three dimensional geometry of the object identified by the reference points. There are a variety of photo-grammetric algorithms that can be utilized to perform this reconstruction. One such algorithm used by the service uses photographs taken from two or more view points to 'trangulate' points of interest on the object in 3D space. This triangulation can be visualized as a process of projecting a line originating from the location of the photograph's observation point that passes through a particular reference point in the image. The intersection of these projected lines from the set of observation points to a particular reference point identifies the location of that point in 3D space. Repeating the process for all such reference points allows the software to build a 3D model of the structure.

EX2018 / IPR2022-00734 / Page 148 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Dr. Curless's Independent Implementation



EX2018 / IPR2022-00734 / Page 149 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Dr. Curless's Independent Implementation



EX2018 / IPR2022-00734 / Page 150 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Dr. Curless's Independent Implementation of the Described Co-registration Process

Downward looking aerial view can be modeled as an orthographic projection:

Orthographic projection. Consider projection along the Z-axis. This is represented by a matrix of the form

$$P = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}. \qquad (6.22)$$

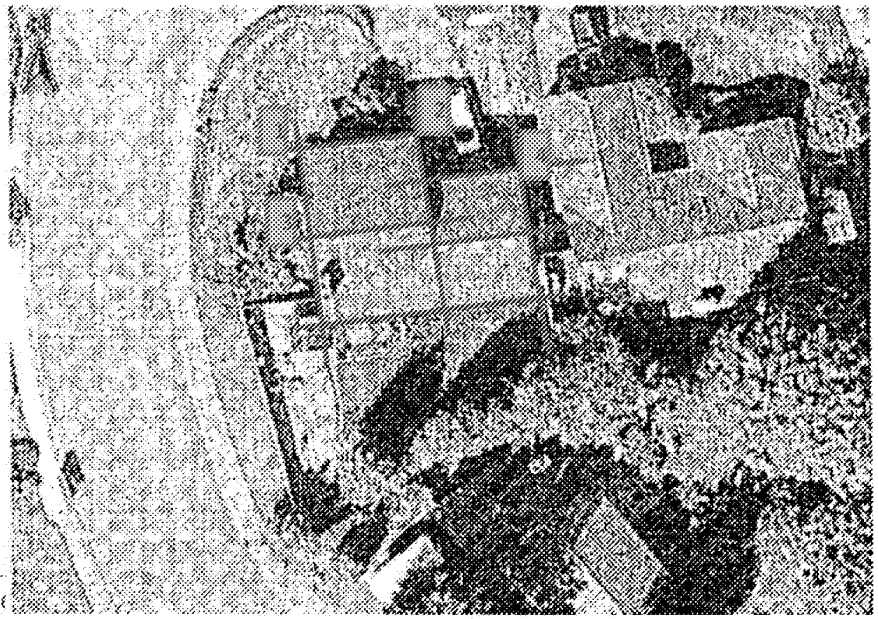
This mapping takes a point $(X, Y, Z, 1)^T$ to the image point $(X, Y, 1)^T$, dropping the Z-coordinate.

For point $X_1 \ldots X_4$, we have projection into the image:

$x_1 = P X_1$

...

$x_4 = P X_4$



EagleView Te

EX2018 / IPR2022-00734 / Page 151 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Dr. Curless's Independent Implementation of the Described Co-registration Process

Oblique aerial view can be modeled as scaled orthographic projection with unknown orientation:

Scaled orthographic projection. A scaled orthographic projection is an orthographic projection followed by isotropic scaling. Thus, in general, its matrix may be written in the form

$$P = \begin{bmatrix} k & & \\ & k & \\ & & 1 \end{bmatrix} \begin{bmatrix} \mathbf{r}^{1T} & t_1 \\ \mathbf{r}^{2T} & t_2 \\ \mathbf{0}^T & 1 \end{bmatrix} = \begin{bmatrix} \mathbf{r}^{1T} & t_1 \\ \mathbf{r}^{2T} & t_2 \\ \mathbf{0}^T & 1/k \end{bmatrix}. \tag{6.24}$$

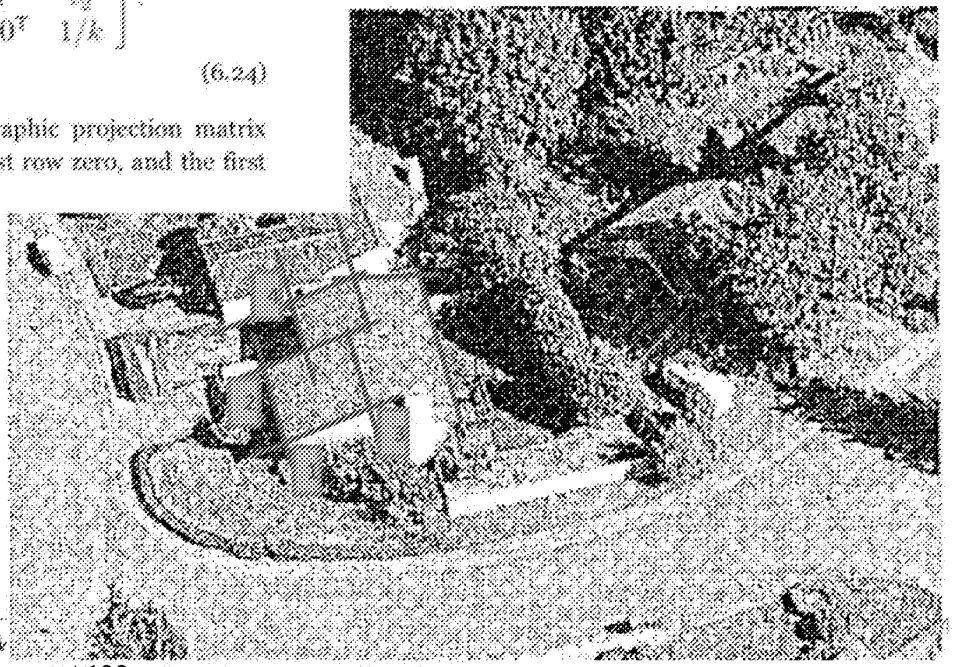
It has six degrees of freedom. A scaled orthographic projection matrix $P = [M \mid \mathbf{t}]$ is characterized by a matrix M with last row zero, and the first two rows orthogonal and of equal norm.

For point $X_1 \ldots X_4$, we again have Projection into the image:

$x_1 = P X_1$

…

$x_4 = P X_4$



EagleV

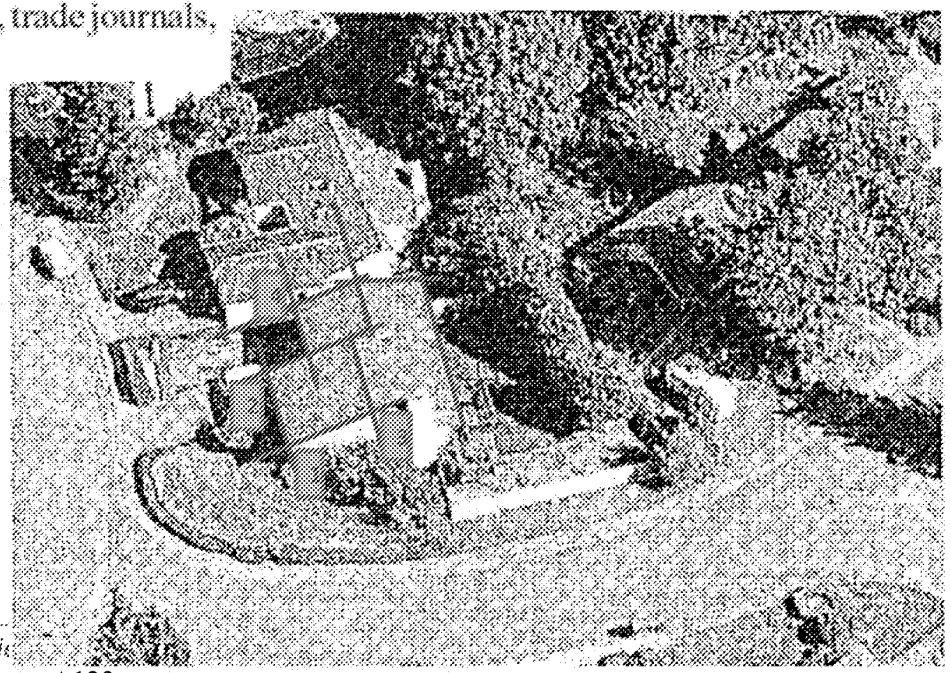
EX2018 / IPR2022-00734 / Page 152 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Dr. Curless's Independent Implementation of the Described Co-registration Process

Exploit common sense knowledge of a roof.

The optimal choice of reconstruction algorithm depends on a number of factors such as the spatial relationships between the photographs, the number and locations of the reference points, and any assumptions that are made about the geometry and symmetry of the object being reconstructed. Several such algorithms are described in detail in textbooks, trade journals, and academic publications.

Can choose a level roof line.
Points 1 and 2 have same z-value.



EagleVi

EX2018 / IPR2022-00734 / Page 153 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

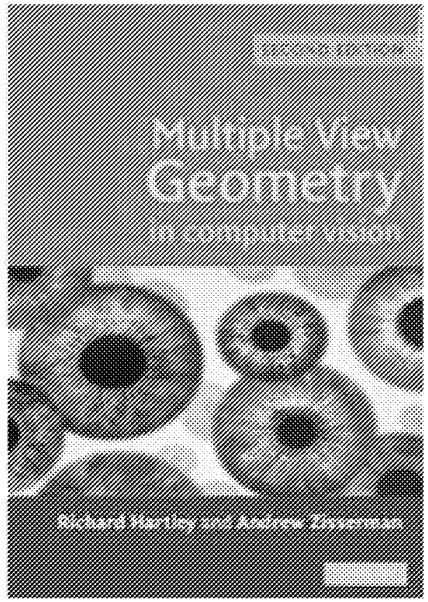
Dr. Curless's Independent Implementation of the Described Co-registration Process

Set up objective function to minimize

Bundle adjustment. If the image measurements are noisy then the equations $x_j^i = P^i X_j$ will not be satisfied exactly. In this case we seek the Maximum Likelihood (ML) solution assuming that the measurement noise is Gaussian: we wish to estimate projection matrices $\hat{P}^i$ and 3D points $\hat{X}_j$ which project exactly to image points $\hat{x}_j^i$ as $\hat{x}_j^i = \hat{P}^i \hat{X}_j$, and also minimize the image distance between the reprojected point and detected (measured) image points x_j^i for every view in which the 3D point appears, i.e.

$$\min_{\hat{P}^i, \hat{X}_j} \sum_{ij} d(\hat{P}^i \hat{X}_j, x_j^i)^2 \qquad (18.1)$$

where $d(\mathbf{x}, \mathbf{y})$ is the geometric image distance between the homogeneous points $\mathbf{x}$ and $\mathbf{y}$. This estimation involving minimizing the reprojection error is known as *bundle adjustment* – it involves adjusting the bundle of rays between each camera centre and the set of 3D points (and equivalently between each 3D point and the set of camera centres).



Solve for camera and point unknowns using any standard non-linear least squares solver.

EX2018 / IPR2022-00734 / Page 154 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

The Co-registration Approach is Enabled and Nonobvious

- Dr. Curless had no difficulty reproducing the result
- EP '966 merely discloses the stereoscopic pair approach

EX2018 / IPR2022-00734 / Page 155 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Examiner Commentary About Art Distinguished During Ex Parte Prosecution

- NFOA: "However, Patent Owner is notified that claim amendments to require a calibration module, step, or feature, would likely necessitate new prior art rejections under 35 U.S.C. §§ 102 or 103, since this amendment would eliminate a feature relied upon to distinguish over the prior art, referring to pages 17, 44, 72, 106 etc. of the Request.
- These pages in the Request refer to stereoscopic pair data that is part of the camera data when the image is acquired, not to image scale data on a final image.
- November 23, 2011 ROA explained that an image file **includes scale data.**
- Art was not distinguished based on absence of **scale data**

EX2018 / IPR2022-00734 / Page 156 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Interpretation of Terms in the Patent

- The '578 patent teaches that image files as purchased and delivered to the user include scale data that can be used to calibrate the image:

> on the image is converted into a physical length. This calibration information is typically presented as a scale marker on the image itself, or as additional information supplied by the image database provider along with the requested image.
>
> The image(s) and calibration information returned by the imagery database is entered or imported into the service's measurement software.

Col. 5, lines 65-67; Col. 6, lines 1-3 of the '578 Patent (emphasis added)

EX2018 / IPR2022-00734 / Page 157 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Amendment to Include Scale Data

- Examiner found "calibration is essential to implementing the invention" Page 12 of Office Action
- Proposed amendment: "at least one image file including information regarding image scale"

EX2018 / IPR2022-00734 / Page 158 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

"Image Calibration" is different in meaning than a "Calibration Module"

- "Image calibration" is conversion of distance of pixels between two points on the image into a physical length:

> During calibration, the distance in pixels between two points on the image is converted into a physical length. This calibra-

Col. 5, lines 63-64 of the '578 Patent (emphasis added)

- On the other hand, "calibration ***module 56***", is also referred to as an "***image analysis and calibration module 56***":

> **92**. In one embodiment, an image analysis and calibration module **56** is linked to the software program **50** that enables

Col. 3, lines 64-65 of the '578 Patent (emphasis added)

> files **54** of the buildings. The software program **50** includes a calibration module **56** that enables the roof company **70** to

Col. 4, lines 34-35 of the '578 Patent (emphasis added)

EX2018 / IPR2022-00734 / Page 159 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Amendment to Address Calibration Module

- Examiner Proctor stated: "calibration module" not enabled
- Calibration module is a subset of the roof estimate software (4:34-36)
- Proposed amendment: "~~calibration module~~ roof estimation software program"

EX2018 / IPR2022-00734 / Page 160 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

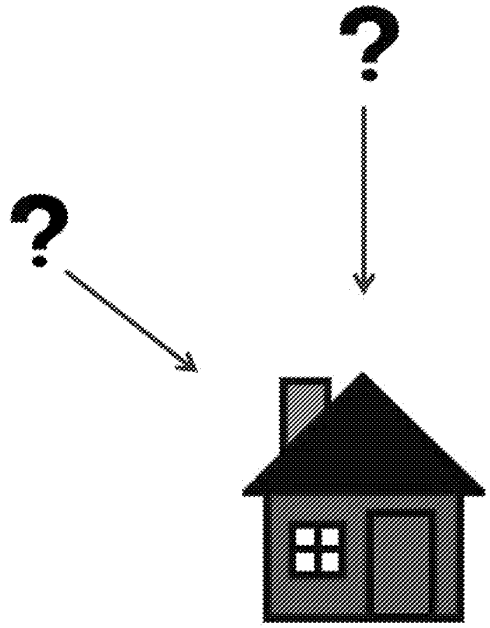


U.S. Patent No. 8,078,436

EX2018 / IPR2022-00734 / Page 161 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Proposed Amendment

- Process uses two images
  - At least one generally orthographic image
  - At least one generally oblique image, said image lacking data concerning the camera orientation



EX2018 / IPR2022-00734 / Page 162 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

AAPA

- NFOA, p. 5:

The following disclosure is interpreted as an admission of prior art:

> "Next, a set of reference points may be identified in each of the images. The service's 70 measurement software then uses these reference points and any acceptable algorithm to co-register the images and reconstruct the three-dimensional geometry of the object identified by the reference points. There are a variety of photo-grammetric algorithms that can be utilized to perform this reconstruction. One such algorithm used by the service 70 uses photographs taken from two or more view points to "triangulate" points of interest on the object in three-dimensional ("3D") space. This triangulation can be visualized as a process of projecting a line originating from the location of the photograph's observation point that passes through a particular reference point in the image. The intersection of these projected lines from the set of observation points to a particular reference point identifies the location of that point in 3D space. Repeating the process for all such reference points allows the software to build a 3D model of the structure.

- The identified subject matter is part of the inventive concept

EX2018 / IPR2022-00734 / Page 163 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.



Secondary Indicia of Nonobviousness

EX2018 / IPR2022-00734 / Page 164 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Industry Praise

Publications by others praising the invention

INNOVATION NATION

One small company reinvents a $30 billion market

CNNMoney

By Jennifer Alsever @CNNMoney December 9, 2011: 8:16 AM ET

Recommend 665 Tweet 384 Share 72 +1 0 Email Print



EagleView founder Chris Pershing changed how the roofing industry operates with a software breakthrough.

NEW YORK (CNNMoney) -- Sometimes one bright idea -- and a whole lot of work to implement it -- can reshape an entire industry.

In 2006, roofing salesman David Carlson vented to his brother-in-law about his frustrations from climbing onto rooftops and manually measuring to give estimates on repair work. Measuring by hand is a tedious process. Plus, people fall off roofs.

EX2018 / IPR2022-00734 / Page 165 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Skepticism

- ""I thought, ***'There is no way,"*** says Belz, the Missouri claims adjustor. But once a few big insurers embraced the technology, ***Belz and others began to follow."***

"One small Company Reinvents a $30 billion Market," CCN Money online, December 9, 2009

EX2018 / IPR2022-00734 / Page 166 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Nexus

Bloomberg Our Company | Professional | Anywhere

HOME | BUSINESS | NEWS | OPINION | MARKET DATA | PERSONAL FINANCE | TECH | POLITICS | ...

EagleView's Software Measures Rooftops With Photos From the Sky

By John Tozzi - Dec 8, 2011 12:22 PM PT

Roofers once had to spend hours with ladders and tape measures to figure out the size of a job. Now they can get the precise dimensions of roofs -- the area of each section, the pitch, the length of ridges and eaves -- without leaving their desks.

In recent years, aerial and satellite photos have become abundant and detailed enough to show most U.S. buildings from several angles, and companies have emerged to turn those images into useful renderings. "It takes a lot of time to go out and measure a roof, so anything that will help with accuracy is a great idea," says James Kirby, an architect with the National Roofing Contractors Assn. EagleView Technologies was just awarded a U.S. patent on its method to derive roof measurements from aerial photos, an accomplishment that Chief Executive Officer Chris Barrow hopes will give the three-year-old Seattle company an edge over competitors such as RoofWalk, Pictometry, and Aerialogics.



EagleView patches together detailed roof renderings using aerial photos from public sources, such as county land records, or private databases. Its software matches up edges, colors, and shapes to create a three-dimensional image of the roof. EagleView's patent, previously granted abroad, will be issued Dec. 13, according to a notification from the U.S. Patent and Trademark Office. Barrow, 48, says the method is more precise and less cumbersome for roofers and insurance claims adjusters than the old-fashioned way. "It's very difficult to get an accurate measurement with a tape

Roofers once had to spend hours with ladders and tape measures to figure out the size of a job. Now they can get the precise dimensions of roofs -- the area of each section, the pitch, the length of ridges and eaves -- without leaving their desks.

EX2018 / IPR2022-00734 / Page 167 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Commercial Success

- Invention is source of commercial success
- Revenue grew from zero in 2007 to about $40 million in 2011
- On Inc. Magazine's 500 Fastest Growing Private Companies in America
- "EagleView's reports, priced at $20 to $80 each, are now used by around ***50,000 roofers*** and ***almost every single large insurance company.*** "One small Company Reinvents a $30 billion Market," CCN Money online, December 9, 2009 (emphasis added)

EX2018 / IPR2022-00734 / Page 168 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

The Invention is Now the Industry Standard

- "Having an ***Eagle View report*** has become an ***industry accepted standard***," says Kirk Belz, a partner at Mid-America Adjusting Services, an Ozark, Mo., company that investigates claims for national insurers.

  "One small Company Reinvents a $30 billion Market," CCN Money online, December 9, 2009

- "Now, Graham agrees that EagleView reports cut down on arguments with insurers, because '***most insurance carriers at this point treat it as gospel.***' ***In the past***, when he came up with a different number than an insurance adjuster, '***I'd have to spend hours out there teaching them how to measure a roof,***' he says.

  "EagleView's Software Measures Rooftops With Photos From the Sky" Bloomberg online Dec. 8, 2011

NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC. EX2018 / IPR2022-00734 / Page 169 of 723

Copying By Others

- EagleView's product was a disruptive, new technology
- Within three years, the following companies launched "copy cat" products:
  - RoofWalk
  - GeoEstimator
  - SkyTekImaging
  - Aerialogics
  - Roofers411
  - ConnectPoint
- **Evidence that others could practice the invention based on the application**

EX2018 / IPR2022-00734 / Page 170 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Acquiescence

- *EagleView v. RoofWalk* (W.D.Wash 2012)
- RoofWalk enters consent judgment of validity and infringement
- RoofWalk closed its doors
- EagleView has decided not to license
- *EagleView v. Aerialogics* (W.D.Wash 2012) stayed pending this proceeding

EX2018 / IPR2022-00734 / Page 171 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.



Thank You

EX2018 / IPR2022-00734 / Page 172 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

ATTACHMENT 2

(96/000,004 - 290115.401C1RE)

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent	:	8,078,436 B2
Control No.	:	96/000,004
Filed	:	December 28, 2012
For	:	AERIAL ROOF ESTIMATION SYSTEMS AND METHODS

Examiner	:	Jason Scott Proctor
Art Unit	:	3992
Docket No.	:	290115.401C1RE
Date	:	October 24, 2013

Commissioner of Patents
Washington, DC 20231

DECLARATION

Commissioner for Patents:

I, Chris Pershing, declare as follows:

1. I am the Chief Technical Officer and co-founder of Eagle View Technologies, the owner of U.S. Patents 8,145,578 (the '578 patent) and 8,078,436 (the '436 patent). I am an inventor for each of these patents. I have over 15 years of experience in software development and engineering related to applied physics, and have held software related engineering positions at Philips Medical Systems, Microsoft Corporation and Veeco Instruments. I have a Masters of Science degree in Physics and a Bachelors of Science in Engineering Physics, both from the University of Arizona. I am an inventor of US Patent No. 8,078,436.

2. Following is a very brief explanation of some of the steps I carried out in making this invention. Sometime in the second half of 2006, I had a conversation with David P. Carlson, the other listed inventor, regarding whether it would be possible to obtain specific measurements of a roof without having to climb on the roof. I speculated that a solution to that problem might be found by utilizing aerial and satellite

imagery that had become widely available through Google, Microsoft Live (now Bing Maps), USGS, and like services. The overhead views, also called the top plan view or orthogonal view in the image files I could obtain had a scale reference that provided a mechanism to convert a pixel distance in the image to a physical distance in feet or meters. With that scale reference, one could calculate the length of a line near-to and parallel-to the ground as well as an area of a polygon in the plane of the ground for the overhead image. However, the image files did not provide information to allow someone to determine the depth (e.g., distances perpendicular to the image viewpoint). Further the oblique images, sometimes call oblique perspective images or perspective images did not usually have scale information at all, or if they had it, it was of limited use. I wondered whether, without being given specific information about how the image was acquired and details about the camera position when the image was taken it would be possible to determine the pitch of sloped roof sections. I concluded that without a determination of the pitch of the roof sections, an accurate assessment of the surface area and the length of sloped edges and seams on the roof could not be achieved.

3. As I studied the problem I also realized that if the pitch of the various roof sections could be reliably and accurately determined from an analysis of two more unrelated images, a vast and readily available library of imagery covering the United States could be successfully leveraged to provide a viable remote roof measurement solution. The ability to successfully leverage available image libraries that had been accumulated by multiple image providers over many years would be a significant achievement and a great advance in the field of roof measurements, if I were able to figure out how to do this.

4. As I considered how to solve the pitch problem, I realized that I would need to find a way that used only information from the image files themselves. While the various image file libraries might include two or more images of the same house, taken at different angles, these were taken independent of each other and I would not be able to obtain any data about the location of the camera for each of the images. I therefore sought a method that would rely solely on the image files themselves. More specifically, I studied the possibility of using image files containing oblique viewpoints

(such as the Microsoft's "Bird's Eye" images) in combination with images containing a top-down viewpoint (such as the near vertical viewpoints commonly found in orthographic image maps). At the start of my investigation, I did not know if this approach would be successful or even if the quality and the number of the available oblique viewpoints for a given location would be sufficient to consistently and accurately determine the pitch and overall 3D form of the targeted buildings. I used the knowledge I gained in my math, physics, and engineering background to speculate that I could derive a set of equations that would solve for the spatial relationships between the images and allow me to determine depth information (z-values) for the relevant points on the roof in the images. I used my wife's decorative bird houses as a model to help me think and work through a solution.

5. The method that resulted from this prototyping and an example of the end-product is taught in the body and figures of the '578 patent. This method was inventive. As evidenced by our aggressive growth in business volume, the method solved an important and valuable problem in the roofing and insurance industries. As evidenced by the reaction in the marketplace, the method was unexpected and unanticipated to the industries we serve as well as providers of software packages and aerial imagery that service those same industries. As evidenced by our humble beginnings from starting a brand new company from scratch for which this was the only product and the growing business success of EagleView, the economic benefits of leveraging commonplace imagery provided a working solution to an otherwise unworkably expensive problem.

6. We officially launched the product in the last week of January 2008 with an email blast to many in the roofing business and asking them to try our service to provide them detailed roof reports of any address they provided to us in the United States. Within the first hour on the first day we announced our service, our phone began to ring, with people asking to buy the roof reports that were the product of the invention described in what became the '578 and '436 patents. The reception in the industry was nothing short of amazing. Over the weeks that followed, our wives volunteered their time answering phones, assembling more desks, and helping to find and

interview the staff we needed to meet the rising tide of interest. Four months later, we had outgrown the size and infrastructure of our temporary office space, and found something bigger to accommodate our growth.

7. Our first and largest initial challenge in the marketplace was to prove that we were 'real'. Many of the initial contacts with contractors and companies were met with deep skepticism about our claim to be able to remotely and accurately measure the correct pitch and area of roofs from photographs obtained from commercially available image databases, such as Bing and Pictometry. In an attempt to debunk our claims, many early customers followed our first conversation by sending in an address of a particularly difficult roof that they had recently measured by hand. Upon receiving and validating the reports against their own measurements and finding that our reports were accurate, the conversation changed to something to the effect of: "that was amazing, we are surprised you were able to do this."

8. The buzz we created within the roofing contractor community soon caught the attention of insurance companies and software companies that service the insurance industry. Once such software company, Xactware, is a dominant provider of claims routing and adjusting software that services many of the nation's top insurance companies. We were invited to their headquarters just a couple of months after opening our doors. They were impressed with our product and stated they had previously failed at an internal effort to figure out how to use such imagery to remotely measure features in pitched roofs. They subsequently entered into a contract with us to use roof reports we produced in large quantities. At the time of the first meeting in early 2008 I had not shown them the patent application that resulted in the '578 patent which we had previously filed but which had not yet published, so they were not able to read the Application that became the '578 patent to see how we achieved this.

9. Another company, Pictometry International, invited us out to their headquarters in the fall of 2008. We were customers in buying their oblique imagery product and they noticed we were buying more and more images from them. They saw that our product was rapidly making progress penetrating into use by the insurance industry – an industry that Pictometry had been struggling with finding success with over

a period of years. Even though Pictometry was the supplier of our oblique imagery, they too were wondering with the 'how did you do that?' question with regard to our ability to accurately determine pitch and 3D roof models using the photos they were selling to us. When they sold their images, they intentionally removed from them nearly all the metadata collected at the time the image was taken, including all camera data and image acquisition data. The remaining metadata included only geolocation and image scale data in the orthographic images and only geolocation and approximate compass orientation of the oblique images that differentiated the East, West, North, and South looking viewpoints. This is equivalent in substance to the minimal metadata they allowed Microsoft to present to end users of the "Bird's eye" imagery in the form of visual scale markers and an indication of East, West, North, South viewpoint directions. Pictometry had believed that by removing nearly all metadata from the image files, a person would not be able to make use of unrelated images to recreate a 3D model of the roof. To paraphrase, the comment from one of their executives was that we 'shouldn't have the ability to do that' with what they knew they were providing to us in the image files. To my knowledge, they had not, at that time, seen the '578 patent application which was not published until October 2008 and I did not show it to them at that time.

10. One reason they were very surprised is because we were able to achieve these unexpected results and produce the final reports based solely on using the image data files. We obtained no other information other than what we got from the unrelated, independently taken images and without an on-site visit to measure any actual roof properties.

11. Another unproven goal of the invention at the time of launch was to produce remote measurement results that were comparably accurate compared to the accepted manual roof measurement practices. To our surprise, we would soon learn that, on average, we were not only competitive with the existing manual measurement accuracy; our results were far more accurate and repeatable. In contrast to the smaller roofing contractors who were testing our product, insurance companies approached their testing with much more statistical rigor and with much larger test samples. It was not uncommon for an insurance company to conduct a test involving many hundreds of roofs

across the country – sometime by ordering those roof reports anonymously under a false company name to shield us from knowing the scope or recipient of the testing. The results from several such tests from different insurance companies were consistently similar: The area reported on EagleView's measurement reports typically fell within 1% to 2% of what they determined to be the actual value obtained by a through their own on-site verification at each of the targeted buildings. In contrast, previous similar studies of crews performing manual on-site roof measurements typically found average differences of 6%– 10%. Thus, in addition to streamlining business practices, having a professional looking product, and reducing time and injury risk spent on a roof, the EagleView reports produced by this invention replaced manual roof area estimates with a significantly more accurate result.

12. As evidenced by the recognized growth of the volume of our business, the growth of our employee head count, and the numerous testimonials and articles attesting to the impact we have made within the industries we service, this invention has proven its uniqueness and value to the world. I will summarize these in the following paragraphs.

13. Just a few days before our January 2008 launch, the other co-inventor, David P. Carlson and myself hired and began training our first few employees. - At the time of we launched our service, the only product we sold was the product described and claimed in the '578 and '436 patents, namely, a report that had included on it the values we have determined for the roof area, the pitch and the length of various roof edges, valleys and ridges. Thus, 100% of the initial sales were directly for the product that is claimed in many of the claims of these two patents. In Fiscal Year 2008, our revenue for this product was about $1.4 million. As of December 31, 2008, our employee head count was 56. We thus grew from the first few employees hired in January 2008 to 56 employees at year's end. In the FY 2009, our revenue was over $5.3 million for this product, close to quadrupling for the prior year and our employee count at the end of the year was 69. In FY 2010, our revenue exceeded $12 million for this product, a doubling from the prior year and our employee count had grown to 105. By the end of FY 2010, many large insurance companies became convinced that our reports

had data and measurements that were superior in many ways to measurements they could obtain other places and began to purchase more roof reports from us. As a result, in FY 2011 we had revenue of greater than $33 million from this product, almost triple from the prior year and in FY 2012 our revenue was more than $45 million from this product, another year of significant growth. In 2011 we ended with 161 employees and this stayed about the same through 2012. In reporting the above numbers the stated revenue resulted from the sale of the claimed inventions, namely, a roof report having the determined measurements on it as specified in the '578 and '436 patents. With respect to the '436 patent, these reports were made from images that included a top plan view and an oblique perspective view and also included different colors of lines for different roof properties, such as red for ridge lines and light blue for valley lines. The edges were also a different color, for example green or dark blue. The pitch was indicated on the roof reports as well with an arrow showing the direction of the pitch. The orientation of the pitch arrow is relative to the compass rose indicated on the page which may or may not have the North direction aligned with orientation of the page.

14. There have been significant publications in various press sources that have touted our success. I attach hereto as Pershing Exhibits A and B some of those articles. During the Examiner's interview held on Oct. 17, 2013, we discussed the article in CNN Money by Jennifer Alsever and a full copy is enclosed as Pershing Exhibit A for the Examiner's detailed review. We also discussed the article in Bloomberg by John Tozzi and a full copy is enclosed as Pershing Exhibit B. The Examiner can review these two articles in detail and I will quote only a few sections from each of them. In the CNN Money publication, Kirk Belz is cited for the statements of: "Having an Eagle View report has become an accepted industry standard." He also states that he can process 25% more claims each day using these reports, all without sending an adjustor onto the roof, which saves the adjustor 45 min per roof and avoids the dangerous job of climbing on the roof. In the Bloomberg article, Joe Graham is cited for stating that with respect to Eagle View roof reports, "most insurance carriers at this point treat it as gospel."

15. An articles authored by Chris King, titled "Bird's-Eye View illustrates the response in the industry from the early launch, having been published in

August 2009, attached as Pershing Exhibits C. This article is also by an author independent from EagleView and shows recognition in the industry of the benefits that were obtained by the claimed invention of the '578 and '436 patents. The Examiner is invented to review the entire article and I will only quote herein from one location near the end. Troy Mock, President of BRM roofing states: "I've been with them since the beginning, and thing really picked up since February of last year." He states that he had them shoot 100 roofs due to a recent hail storm in Houston. The article states, " 'The bottom line is that this would help every roofing contractor,' said Mock. 'The number one reason is liability-you don't have to have salesmen climbing on the roof, hurting themselves or damaging the roof.' " Another briefer article is also attached by Jeff Bond, Pershing Exhibit D that explains the benefits of the inventive reports.

16. There are a number of other articles attached as Pershing Exhibits E-H which have were authored by Eagle View employees and printed in various magazines. For example, two of the authors list are Karen Edwards and Heidi Ellsworth, both of whom were employees of Eagle View at the time they wrote the articles and thus the authors were not independent from the patent owner and company selling the inventive reports. The articles do contain information about the industry acceptance of the EagleView roof reports as well as comments by many in the Roofing Industry regarding their views on these reports and therefore have value in showing both the tremendous benefits of the invention and the acceptance in the industry. Also attached are case studies as Pershing Exhibits I-N that were prepared by Eagle View employees that were specific case studies on the benefits of using Eagle View reports that were produced by the process and system covered in the'578 and '436 patents.

17. Over the years, Eagle View has received a number of comments and testimonials from roofers on the benefits of they obtain from using the Eagle View reports and these are attached as Pershing Exhibit O. To protect the private contact information of those sending the comments, their email address, phone numbers and other personal information has been redacted, but the no other changes have been made to the content of the messages as received from these various people who work daily in the roofing industry.

18. Let me comment briefly a particular term used in the '578 patent, which is found in Col 6, lines 5-8. I personally wrote the source code that was used to output the claimed roof reports. I considered that this source code was owned by EagleView, the company I help found and I understand the term "proprietary" to mean a term of ownership. I did not wish to disclose the specific source code used and I understood that this was not needed to obtain a patent, but I did provide sufficient detail in the '578 patent that a person working in this technology field at the time would be able to repeat the inventive results. Namely, from reading the disclosure of the '578 patent, they would be able to make and use the invention claimed in the '578 patent, even though I didn't disclose the specific source code, namely the algorithm, I had written. I gave a specific example of an actual roof report in Figures 5A-5F to be created and explained in the '578 application as filed how to create such a report, referring the reader to some specific techniques and where needed, to publicly available textbooks, trade journals and other publications. I believed this was sufficient detail to permit a person working in this field to be able to create such a report and still believe that today.

19. In fact, the industry showed that, as early as January 2009, and after our applications were published, a number of copy-cat companies started-up and created nearly identical reports and began selling them in competition with us. I had not given them my source code and yet by having access to our end reports, a real example of which I provided in the patent and what other information they were able to glean from the press and the '578 published patent application, they were able to imitate my results. Of course, I don't know the things the competitors studied to copy our product since they didn't contact me when they did so, but what I do know is that they made look-a like reports sometime after the '578 application was published, so I believe that there was sufficient information included that would permit another person to make and use the invention as claimed. The companies who imitated our products, many of whom to which we have sent notice letters include RoofWalk, GeoEstimator, Skytek Imaging, Aerialogics, Roofs411 and ConnectPoint. This is evidence not only that they could create such reports, but also evidence that sometime after we started this business with an entire new product, others decided to imitate our product.

20. In the '436 patent, this term was changed to "any accepted algorithm," see Column 6, lines 51-54. This does not mean it is admitted as prior art. This text recognizes that other could write different source code than I had written and still practice the invention. In fact, I am an inventor of the subject matter of Column 6, lines 50-67 and Column 7, lines 1-7. I do not admit that any of this description is prior art since it is not. I defined a problem that others had not recognized and then created a solution to that problem, which I explained in the '436 patent, including in Columns 6 and 7. Of course, I did not invent the math for performing the image analysis solely from the image data files, (it is rare that someone invents math) but what I did was identify a significant problem in the roofing industry, and I also determined which math should be applied to solve that particular problem. This required a significant creative process. I did invent, create and teach in the '578 and '436 patents the steps and mechanisms by which known math could be used to solve a new problem that no one had been able to solve previously. While some computer written code in the form of photo-grammetric algorithms existed as generally known in the art, they had never been applied or explained in way by which data taken solely from image files of a roof could be used to determine the pitch of roof and other measurements remotely. I was able to apply math in a new and unexpected way that resulted in the claimed invention. I was the one who recognized that the optimal choice for a reconstruction algorithm depends on a number of factors, (Col 6, lines 21 and 23 in the '578 patent and Col. 7, lines 1-3 of the '436 patent) and I determined what those factors were and explained them to the public in these patent applications. I was able to create a new product that had not existed before I came up with the inventions described in the '578 and '436 patents and find the parameters that were important to lead to that solution. Thus, my recognition that existing well known math from textbooks and journal articles could be used to solve the problems no one else had recognized and solved to create roof reports was part of the invention of the '578 and '436 patents. Thus, the Examiner's assertion that parts of Column 6 and Column 7 of the '436 patent is admitted prior art is not correct.

21. The subject matter in the '436, Column 8, lines 15-56 is not prior art. I did not admit that it was prior art in the application as filed and I do not admit that

it is prior art now. The statement that a variety of automatic and semiautomatic techniques may be employed to generate a model of the roof is not a statement of prior art, but a simple recognition that others might use different systems and code from what I used and written and achieve the claimed invention. This part of the '436 patent describes Figure 6 which is one of the systems for carrying out the claimed invention, similar to those shown in Figures 1 and 2 of the '436 and 578 applications as filed. The system shown in figure 6 and described in Col. 8 performs the inventive steps I had previously described and were claimed in the '436 patent. There is a recognition that systems using different software programs and different math than the specific one I had used could also practice the invention, but this would not avoid the invention if they made use of the claimed features. As one simple example, one algorithm may approach the solution through solving a large series of simultaneous equations; another algorithm may use a stochastic optimization method, and another may use an iterative approach, repeating that process for all reference points, in order to determine the 3-D model of the structure. It is expected that the implementation of my inventive disclosures would happen with standard programming techniques, using a range of programming languages, database systems, file systems, or other techniques for storing information. I did not invent a new programming language and instead, used existing programing languages. Furthermore, the implementation of that the inventive disclosure distributed across more than one machine using standard distributed computing techniques including messaging techniques, but this does not mean that the underlying technology I created is not inventive.

22. Prior to these inventions, the standard way roofs were measured was by sending a person to the structure's physical site, have that person get out a ladder, get up on the roof and measure the dimensions of the roof with a tape measure. This was the standard, accepted way of performing roof measurements by roofing contractors bidding for roof repair jobs, by insurance companies evaluating claims for roof damage, and others. This method was very expensive, requiring hiring people to perform the measurements, which in some cases may take up to several hours per structure. In addition, there was a very real danger to the people performing the measurements falling

or otherwise hurting themselves during the process. In many scenarios, such as a widespread disaster such as a tornado, hurricane, hailstorm or fire, this method for measuring roofs or other structure attributes for repair was not practical. Tens of thousands of structures, for example single-family homes, may have extensive roof damage requiring repair, requiring weeks or months for repair bids or insurance claims to be processed, before any actual repair can start. This previous process was grossly inefficient, resulting in inaccurate bids and estimates, high prices for owners and insurance companies, and significant delays in repair of widespread damage. This was the state of the building measurement industry in the U.S. in 2008 when I founded EagleView.

23. In addition to the expense of sending a person on-site both in terms of time spent and money spent to measure a roof, there was also a very real danger to the people measuring the roofs falling or otherwise hurting themselves during the measurement process. Nevertheless, this was the normal, accepted way roofs were measured prior to this invention.

24. As noted above, the company founded on this patent has gone from no revenues in 2007 to more than $45 million in revenues in 2012 from the sale of products that fall within the ‘578 and ‘436 patents. We have delivered over 3.5 million roof measurements to date, and this number is growing at an aggressive rate. Roof reports produced by Eagle View are used by over 50,000 roofers and by almost every single large insurance company. In 2012, Eagle View was listed by Inc. Magazine as one of the 500 fastest-growing private companies in America. Reports produced by Eagle View have become an industry accepted standard for claims investigations. By implementing these inventions, and satisfying a long-felt need in the construction and insurance industries by using aerial imagery that had been widely available from multiple sources, Eagle View was able to create an entirely new industry where none existed before, serving customers in a way they had never been served before.

25. The success from creating these reports is based on the very features that are claimed in the respective applications, namely, for the ‘578 the ability to create a roof report based solely on the received image files. This opened up an entire

new library of images that could be used since many such libraries contain only image file data and not camera or image acquisition data. For the '436 patent, the ability to make a roof report for two images, one a top plan view and the other a different view, in one example, an oblique perspective view, permitted the use of many libraries of images that were unrelated to each other at the time they were taken to now be correlated with each other used together to create a new report. It is therefore the claimed features that resulted in the end product the caught the industry by storm, was unexpected and resulted in the rapid growth of Eagle View technologies.

26. I hereby declare that all statements made herein are of my own knowledge are true and that all statements made on information or belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the captioned patent application or any patent issued therefrom.

10/25/2013
Date

Chris Pershing

Attorney Docket No. 097171-00262

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

In re *Inter Partes* Review of: U.S. Patent No. 8,542,880 Issued: September 24, 2013 Named Inventor: Thornberry et al. Patentee: Pictometry International Corp. Filed: February 22, 2013 Title: SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING AERIAL IMAGERY	I hereby certify that this correspondence is being electronically filed per 37 CFR § 42.6(b)(1) with the U.S. Patent and Trademark Office via EFS-Web on 2/8/2016. Typed or printed name of person signing this certificate Janelle Fava Signature Janelle Fava

Mail Stop PATENT BOARD
Patent Trial and Appeal Board
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 8,542,880

Dear Commissioner:

Pursuant to 35 U.S.C. §§ 311-319 as amended by the Leahy-Smith America Invents Act, Xactware Solutions, Inc. ("Xactware") respectfully petitions for *Inter Partes* Review of United States Patent No. 8,542,880 , which issued September 24, 2013, to Thornberry et al., from an application filed on February 22, 2013 (the

"'880 Patent"). A copy of the '880 Patent is attached hereto and made a part hereof as XACTWARE EXHIBIT 1001.

TABLE OF CONTENTS

		Page
I.	INTRODUCTION	1
II.	REAL PARTY-IN-INTEREST	1
III.	RELATED MATTERS	1
IV.	GROUNDS FOR STANDING AND ELIGIBILITY	2
V.	LEAD AND BACK-UP COUNSEL	2
VI.	SERVICE INFORMATION	3
VII.	FEE INFORMATION	3
VIII.	POWER OF ATTORNEY	3
IX.	SPECIFIC IDENTIFICATION OF THE CHALLENGES TO THE CLAIMS OF THE '880 PATENT	3
X.	OVERVIEW OF THE '880 PATENT	4
XI.	CLAIM CONSTRUCTION	5
	A. "location data"	6
	B. "visual marker"	6
	C. "final location"	7
XII.	THE PATENT CLAIMS ARE INVALID UNDER 35 U.S.C. §§ 102-103	7
	A. Claim Chart 1: Claims 1, 2, 5, 8, 13-15 and 20 of the '880 Patent are Unpatentable as Anticipated under 35 U.S.C. § 102(b) over Abhyanker (Xactware Exhibit 1003) (Ground 1)	8
	B. Claim Chart 2: Claims 1-10 and 13-20 of the '880 Patent are Unpatentable as Anticipated under 35 U.S.C. § 102(b) over Pictometry (Xactware Exhibit 1004) (Ground 2)	16

C. Claim Chart 3: Claims 4, 7, 17 and 19 of the '880 Patent are Unpatentable as Obvious under 35 U.S.C. § 103 over Abhyanker (Xactware Exhibit 1003) in view of Hsieh (Xactware Exhibit 1005) (Ground 3) 36

D. Claim Chart 4: Claims 4, 7, 17 and 19 of the '880 Patent are Unpatentable as Obvious under 35 U.S.C. § 103 over Pictometry (Xactware Exhibit 1004) in view of Hsieh (Xactware Exhibit 1005) (Ground 4) 42

XIII. CONCLUSION AND FEE AUTHORIZATION 49

XIV. CERTIFICATE OF SERVICE i

TABLE OF AUTHORITIES

Page(s)

FEDERAL STATUTES

35 U.S.C. § 102 ..... 3, 4, 7, 8, 16

35 U.S.C. § 103 ..... 3, 4, 7, 36, 42

35 U.S.C.S. § § 311-319 i

35 U.S.C.S. § 312 ..... i, 50

REGULATIONS

37 CFR § 42.6 i

37 CFR § 42.15 50

37 CFR § 42.100 ..... 5, 50

37 CFR § 42.103 50

CASES

In re Seid, 161 F.2d 229, 73 USPQ 431 (CCPA 1947) 42, 49

LIST OF EXHIBITS

XACTWARE EXHIBIT 1001:	U.S. Patent No. 8,542,880 to Thornberry et al. issued September 24, 2013
XACTWARE EXHIBIT 1002:	Power of Attorney
XACTWARE EXHIBIT 1003:	U.S. Patent Publication No. 2007/0220174 to Abhyanker, published September 20, 2007
XACTWARE EXHIBIT 1004:	Publication entitled "Pictometry Visual Intelligence, Electronic Field Study User Guide", Version 2.7, (July 2007) ("Pictometry")
XACTWARE EXHIBIT 1005:	Publication by Hsieh, entitled "Design and Evaluation of a Semi-Automated Site Modeling System," Carnegie Mellon, November 1995 ("Hsieh")
XACTWARE EXHIBIT 1006:	Declaration of Harold Schuch ("Schuch Decl.")

I. INTRODUCTION

Xactware Solutions, Inc. ("Xactware" or "Petitioner") respectfully petitions for *inter partes* review of Claims 1-10 and 13-20 of U.S. Patent No. 8,542,880 to Thornberry et al., which issued September 24, 2013 (the "'880 Patent") and which is attached as Xactware Exhibit 1001.

II. REAL PARTY-IN-INTEREST

The real party-in-interest is Xactware Solutions, Inc., which is wholly owned by Insurance Services Offices, Inc., which itself is wholly owned by Verisk Analytics, Inc.

III. RELATED MATTERS

Petitioner notes that a lawsuit is pending in the United States District Court for the District of New Jersey, and is captioned *Eagle View Technologies, Inc., and Pictometry International Corp. v. Xactware Solutions, Inc., and Verisk Analytics, Inc.*, Civil Action No. 2:15–cv–07025 (hereinafter "the Lawsuit"). The Lawsuit was filed on September 23, 2015, wherein Eagle View Technologies, Inc. ("Eagleview") and Pictometry International Corp. ("Pictometry") allege infringement of nine (9) patents, including the '880 Patent. Specifically, the Lawsuit alleges infringement of U.S. Patent Nos. 8,818,770, 8,825,454, 8,823,732, 8,542,880, 8,209,152, 8,170,840, 8,078,436, 9,129,376, and 9,135,737. Petitions

for *inter partes* review of the asserted claims of each of these patents are also being filed on even date herewith.

IV. GROUNDS FOR STANDING AND ELIGIBILITY

Xactware certifies that the '880 Patent is eligible for *inter partes* review, and that Xactware is not barred or estopped from requesting an *inter partes* review challenging the patent claims on the grounds identified herein. The Complaint in the Lawsuit was served on October 8, 2015 for all patents-in-suit except U.S. Patent Nos. 9,129,376, and 9,135,737, which were served on November 30, 2015. Xactware thus certifies that this *inter partes* review petition is not being filed more than one year after being served with a complaint alleging infringement of the '880 Patent. Xactware further certifies that it has not filed a civil action challenging the validity of any claim of the '880 Patent. Xactware certifies that estoppel does not prohibit this review.

V. LEAD AND BACK-UP COUNSEL

Xactware designates lead counsel and back-up counsel as follows:

Lead Counsel	Back-up Counsel
Mark E. Nikolsky (Reg. No. 48,319) mnikolsky@mccarter.com McCarter & English, LLP Four Gateway Center 100 Mulberry Street Newark, NJ 07102-4056 Tel.: 973-639-6987 Fax.: 973-297-6624	Vadim E. Cherkasov (Reg. No. 65,243) vcherkasov@mccarter.com Joseph G. Monaghan (Reg. No. 66,022) jmonaghan@mccarter.com Amit R. Parikh (Reg. No. 65,271) aparikh@mccarter.com Timothy P. Homlish (Reg. No. 66,174) thomlish@mccarter.com

VI. SERVICE INFORMATION

Please address all correspondence to Lead Counsel at the address provided in Section V above. Xactware consents to e-mail service of all papers in this proceeding.

VII. FEE INFORMATION

The Commissioner is authorized to charge all fees due to Deposit Account No. 503571, including but not limited to $9,000 upon the filing of this petition, and if institution is ordered, an additional $15,200 upon institution. If any additional and/or other fees are due from Xactware, or if any credit is due, the Commissioner is authorized to charge/credit Deposit Account No. 503571.

VIII. POWER OF ATTORNEY

Attached as Xactware Exhibit 1002 is a suitable Power of Attorney.

IX. SPECIFIC IDENTIFICATION OF THE CHALLENGES TO THE CLAIMS OF THE '880 PATENT

Xactware respectfully petitions for *inter partes* review of Claims 1-10 and 13-20 of the '880 Patent, and respectfully requests that the Board find same invalid. Xactware identifies the specific statutory grounds under 35 U.S.C. §§ 102 and/or 103 on which each of the challenged claims is based, and the patents and/or printed publications relied upon for each ground, as follows:

A. Claims 1, 2, 5, 8, 13-15 and 20 of the '880 Patent are unpatentable as anticipated under 35 U.S.C. § 102(b) over Abhyanker (Xactware Exhibit 1003) (Ground 1).

B. Claims 1-10 and 13-20 of the '880 Patent are unpatentable as anticipated under 35 U.S.C. § 102(b) over Pictometry (Xactware Exhibit 1004) (Ground 2).

C. Claims 4, 7, 17 and 19 of the '880 Patent are unpatentable as obvious under 35 U.S.C. § 103 over Abhyanker (Xactware Exhibit 1003) in view of Hsieh (Xactware Exhibit 1005) (Ground 3).

D. Claims 4, 7, 17 and 19 of the '880 Patent are unpatentable as obvious under 35 U.S.C. § 103 over Pictometry (Xactware Exhibit 1004) in view of Hsieh (Xactware Exhibit 1005) (Ground 4).

The earliest claimed priority date for the '880 Patent is U.S. Patent No. 8,401,222, filed on May 22, 2009, and the foregoing references relied upon for the grounds of rejection were published or otherwise publicly available more than one year before the earliest claimed priority date.

X. OVERVIEW OF THE '880 PATENT

The '880 Patent, entitled "System and Process For Roof Measurement Using Aerial Imagery," is generally directed to a system for determining attributes of a roof structure of a real-world, three-dimensional building. *See*, e.g., '880 Patent at

Abstract; *see also* Schuch Decl. (Xactware Exhibit 1006); *see also* Schuch Decl., ¶ 31. First location data corresponding to the location of a building is input by a user, and visual access of an aerial image of a region including the roof structure of the building corresponding to the first location data is provided via a straight-down, overhead view. *See*, e.g., '880 Patent at 9:50-10:15; 11:9-16; FIG. 3; *see also* Schuch Decl., ¶ 32. A moveable visual marker is provided in the region corresponding to the first location data, the visual marker capable of being moved to the top of the building to more precisely identify the location of the building roof structure. *See id.* The relocated position of the visual marker acts as a final location having location coordinates. *See id.* User acceptance of the final location of the visual marker is input, and one or more oblique images of an aerial imagery database corresponding to the location coordinates of the final location are provided to the user. *See*, e.g., '880 Patent at 1:33-56; *see also* Schuch Decl., ¶ 33.

XI. CLAIM CONSTRUCTION

In an *inter partes* review proceeding, "[a] claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears." 37 CFR § 42.100(b). Hence, all claim terms should be construed in accordance with the broadest reasonable interpretation ("BRI") in view of the specification from the perspective of one of ordinary skill in the art. Xactware addresses the claim construction of specific claim terms below, and, any

terms not provided with a specific construction below should be construed in accordance with a BRI in view of the specification and their ordinary and customary meaning to one of ordinary skill in the art.

A. "location data"

Petitioner submits that under a BRI, the term "location data" as used by the '880 Patent means information which uniquely identifies a geographic position, such as latitude and longitude coordinates and/or a street address. *See*, e.g., '880 Patent at 3:55-58; *see also* Schuch Decl., ¶ 35. This is consistent with the Patentee's use of the term in the '880 Patent. For example, with reference to FIGS. 4A and 4B of the '880 Patent, the field 102 provided on the computer screen 100 allows a user to enter an address of interest that corresponds to a building 500. *See id.* at 9:53-64. Further, nothing in the file history of the '880 Patent contradicts the foregoing construction.

B. "visual marker"

Petitioner submits that under a BRI, the term "visual marker" as used by the '880 Patent means any shape, pointer, label, icon, avatar or other indicator which is movable or displayable on a computer screen (e.g., by way of a mouse) and which may be visually differentiated from other objects on the computer screen. *See*, e.g., '880 Patent at 5:9-12; *see also* Schuch Decl., ¶ 36. This is consistent with the

Patentee's use of the term in the '880 Patent. Further, nothing in the file history of the '880 Patent contradicts the foregoing construction.

C. "final location"

Petitioner submits that under a BRI, the term "final location" as used by the '880 Patent means a location at which a marker is placed and which corresponds to unique latitude and longitude coordinates. *See*, e.g., '880 Patent at 3:33-35; *see also* Schuch Decl., ¶ 37. This is consistent with the Patentee's use of the term in the '880 Patent. For example, with reference to FIGS. 4B and 4D of the '880 Patent, the marker 106b is positioned in a final location that includes latitude and longitude coordinates that are different from the position of the marker 106a at the initial location corresponding to the first location data. *See*, e.g., '880 Patent at 9:59-10:53. Further, nothing in the file history of the '880 Patent contradicts the foregoing construction.

XII. THE PATENT CLAIMS ARE INVALID UNDER 35 U.S.C. §§ 102-103

Xactware respectfully submits that Claims 1-10 and 13-20 of the '880 Patent are unpatentable under 35 U.S.C. §§ 102-103 as specifically demonstrated in the following claim charts (claim elements are labeled for cross-referenced claims using the following notation: 1.P (preamble of Claim 1), 1.5 (element 5 of Claim 1), etc.).

A. Claim Chart 1: Claims 1, 2, 5, 8, 13-15 and 20 of the '880 Patent are Unpatentable as Anticipated under 35 U.S.C. § 102(b) over Abhyanker (Xactware Exhibit 1003) (Ground 1)

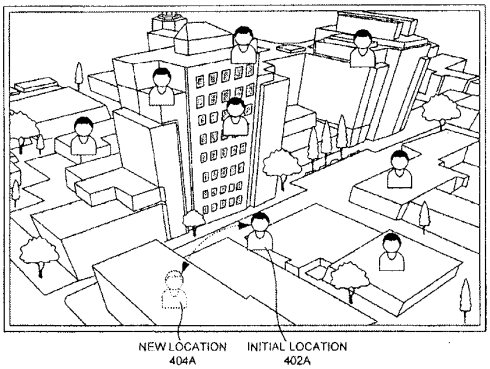
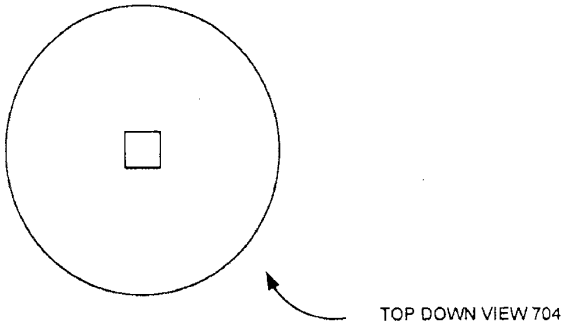
Photogrammetry is the science of making measurements from photographs including, among other things, measuring distances between objects and determining shapes. An overview of the history of photogrammetry is provided in the Schuch Decl. at ¶¶ 16-29.

Abhyanker discloses a system for placing markers in a mapping environment. *See*, e.g., U.S. Patent Publication No. 2007/0220174 to Abhyanker (Xactware Exhibit 1003), Abstract; *see also* Schuch Decl., ¶ 40. More specifically, the system provides the ability to query a database of geo-referenced, digital images by inputting a street address, and outputting a digital image of a mapping environment including a marker corresponding to the queried street address. *See*, e.g., Abhyanker, ¶¶ 0006, 0041; FIGS. 4A, 5; *see also* Schuch Decl., ¶ 41. The mapping environment includes images of buildings having roof structures, and the marker is positioned adjacent to the roof structure corresponding to the street address. *See*, e.g., Abhyanker, ¶¶ 0041-0043, 0089; FIG. 4A; *see also* Schuch Decl., ¶ 42. A drag and drop algorithm is implemented to allow the user to reposition the marker in a more precise location, such as over the roof structure of the building corresponding to the street address. *See*, e.g., Abhyanker, ¶¶ 0005, 0011, 0042; FIG. 4A; *see also* Schuch Decl., ¶ 43. The repositioned location of the

marker includes geographic coordinates associated with the new location, and a locking module is used to accept and save the new location of the marker in the mapping environment. *See*, e.g., Abhyanker, ¶¶ 0010, 0064, 0071, 0096; *see also* Schuch Decl., ¶ 44. Abhyanker also discloses providing images of the buildings with the roof structures from a top down view and/or oblique views for the initial position of the marker and the repositioned location of the marker. *See*, e.g., Abhyanker, ¶ 0089; FIGS. 1, 4, 5, 7, 9; *see also* Schuch Decl., ¶ 46. Thus, as indicated in greater detail below, Abhyanker discloses each and every element of the challenged claims of the '880 Patent.

CLAIM CHART 1	
Claims 1, 2, 5, 8, 13-15 and 20	Abhyanker [Block Type]
1. [1.P] A process for determining attributes of a roof structure of a real-world three-dimensional building, comprising the acts of:	Abhyanker discloses a system that provides a geo-spatial mapping environment of real-world buildings based on input of an address, the images including three-dimensional structures and aerial views of rooftops of buildings, and features for analyzing the images. *See*, e.g., ¶¶ 0005, 0041-0047, 0053; Figs. 1, 4, 5, 7, 9.
[1.1] providing at least one computer input field for a user to input first location data generally corresponding to the location of the building;	Abhyanker discloses a user interface with a search option for inputting an address of a building of interest. The user is able to input the building address into the search option to obtain a real-world image of the building in a geo-spatial mapping environment. *See*, e.g.,¶¶ 0041, 0079, 0081; Fig. 5.
[1.2] providing visual access to an aerial image of a	Abhyanker discloses providing a real-world aerial image of a building corresponding to the

CLAIM CHART 1

Claims 1, 2, 5, 8, 13-15 and 20	Abhyanker [Block Type]
region including the roof structure of the building corresponding to said first location data, the aerial image taken from a straight down overhead view with respect to the roof structure;	searched address, including a view of the rooftop of the building. Abhyanker further discloses that one of the image types provided to the user via the user interface is a top-down view. *See*, e.g., ¶¶ 0005, 0041, 0042, 0089; Figs. 1, 4, 5, 7, 9 (Figs. 4A and 7 reproduced below):  **FIGURE 4A**  Abhyanker discloses that the perspective view shown in FIG. 4A could also be a top-down view 704 (shown in FIG. 7).
[1.3] on the aerial image of the region, providing a	Abhyanker discloses that a marker is generated and placed on the aerial image of the building

CLAIM CHART 1	
Claims 1, 2, 5, 8, 13-15 and 20	Abhyanker [Block Type]
visual marker that is moveable on a computer monitor around said region, said visual marker initially corresponding to said first location data,	corresponding to the searched address. The user is able to move the marker via the user interface on the aerial image to reposition the marker to a new location and more accurately marks the searched address. *See*, e.g., ¶ 0041-0045, 0053; Figs. 1, 4, 5, 7, 9. As can be seen, for example, in FIG. 4A (reproduced above), a visual marker (icon) can be moved from initial location 402A to a final location 404A directly on the roof of the building.
[1.4] wherein said visual marker may be moved to a final location on top of the building to more precisely identify the location of the building roof structure,	Abhyanker discloses that the user is capable of moving the marker to a new location that more accurately identifies the building corresponding to the searched address. As an example, Abhyanker discloses that the initial position of the marker can be near the searched address but not correctly placed over a rooftop. The system disclosed by Abhyanker allows the marker to be repositioned to the center of the rooftop rather than the street. *See*, e.g., ¶¶ 0005, 0042, 0053; Figs. 1, 4, 5, 7, 9. As can be seen, for example, in FIG. 4A (reproduced above), a visual marker (icon) can be moved from initial location 402A to a final location 404A directly on the roof of the building.
[1.5] the final location having location coordinates;	Abhyanker discloses that the geo-spatial mapping environment maintains the latitude and longitude coordinates for the initial position and the second position of the marker in order to coordinate the geo-spatial distance between the different positions. Thus, upon movement of the marker to a new location by the user, the marker is assigned location coordinates in the form of latitude and longitude coordinates. *See*, e.g., ¶¶

CLAIM CHART 1	
Claims 1, 2, 5, 8, 13-15 and 20	Abhyanker [Block Type]
	0010, 0069.
[1.6] providing a computer input capable of signaling user-acceptance of the final location of said marker; and	Abhyanker discloses a locking module that allows a user to lock the relocated position of the marker. Locking the position of the marker signals the user's acceptance of the new location of the marker. *See*, e.g., ¶¶ 0064, 0071, 0096.
[1.7] providing visual access to one or more oblique images of an aerial imagery database corresponding to location coordinates of the final location.	Abhyanker discloses providing a variety of aerial images to the user corresponding to the relocated position of the marker, including top down views and perspective or oblique views. The various views of the building are automatically updated based on the relocation position of the marker. One of ordinary skill in the art would understand that the electronic aerial images are stored in a database. *See*, e.g., ¶ 0089; Figs. 1, 4, 5, 7, 9.
2. [2.1] The process of claim 1 and wherein said first location data comprised street address data, and wherein said location coordinates of said final location are translated to latitude and longitude coordinates.	Abhyanker discloses that prior art systems place a marker in a mapping environment based on latitude and longitude coordinate data associated with a physical location, such as a street address. Abhyanker further discloses that latitudinal and longitudinal data is used for measuring distance between the initial and final location of the marker. The final location of the marker is therefore converted to or has latitudinal and longitudinal data associated with it. *See*, e.g., ¶¶ 0004, 0010, 0012, 0069.
5. [5.1] The process of claim 4 and wherein said providing acts are provided over an internet interface.	Abhyanker discloses that the mapping interface with the aerial image and marker is provided to users via the web (e.g., the Internet). *See*, e.g., ¶ 0012, 0047, 0106.
8. [8.1] The process of claim 1 and wherein said providing acts are provided over an internet interface.	Abhyanker: *See* discussion with respect to Claim 5 of Claim Chart 1.

CLAIM CHART 1	
Claims 1, 2, 5, 8, 13-15 and 20	Abhyanker [Block Type]
13. [13.1] The process of claim 1, further comprising providing visual access to the one or more images of the aerial imagery database corresponding to the final location data.	Abhyanker discloses allowing the user to reposition the marker in a geographic mapping environment and providing an aerial image of the area of interest with the repositioned marker. *See*, e.g., ¶¶ 0041-0045; Figures 4, 5, 9.
14. [14.P] A non-transient computer memory storing computer logic, that when executed by computer hardware causes the computer hardware to determine attributes of a roof structure of a real-world three-dimensional building by:	Abhyanker discloses a computer software that includes instructions for performing a process with computer hardware. The process involves providing a geo-spatial mapping environment of real-world buildings based on input of an address, the images including three-dimensional structures and aerial views of rooftops of buildings. *See*, e.g., ¶¶ 0005, 0041-0047, 0053; Figs. 1, 4, 5, 7, 9.
[14.1] providing at least one computer input field for a user to input first location data generally corresponding to the location of the building;	Abhyanker: *See* discussion with respect to element 1.1 of Claim 1 of Claim Chart 1.
[14.2] providing visual access to an aerial image of a region including the roof structure of the building corresponding to said first location data, the aerial image taken from a straight down overhead view with respect to the roof structure;	Abhyanker: *See* discussion with respect to element 1.2 of Claim 1 of Claim Chart 1.
[14.3] on the aerial image of the region, providing a	Abhyanker: *See* discussion with respect to element 1.3 of Claim 1 of Claim Chart 1.

CLAIM CHART 1	
Claims 1, 2, 5, 8, 13-15 and 20	Abhyanker [Block Type]
visual marker that is moveable on a computer monitor around said region, said visual marker initially corresponding to said first location data,	
[14.4] wherein said visual marker may be moved to a final location on top of the building to more precisely identify the location of the building roof structure,	Abhyanker: *See* discussion with respect to element 1.4 of Claim 1 of Claim Chart 1.
[14.5] the final location having location coordinates;	Abhyanker: *See* discussion with respect to element 1.5 of Claim 1 of Claim Chart 1.
[14.6] providing a computer input capable of signaling user-acceptance of the final location of said marker; and	Abhyanker: *See* discussion with respect to element 1.6 of Claim 1 of Claim Chart 1.
[14.7] providing visual access to one or more oblique images of an aerial imagery database corresponding to location coordinates of the final location.	Abhyanker: *See* discussion with respect to element 1.7 of Claim 1 of Claim Chart 1.
15. [15.1] The non-transient computer memory of claim 14, wherein said first location data comprised street address data, and wherein said location coordinates of said final location are translated to latitude and longitude	Abhyanker: *See* discussion with respect to Claim 2 of Claim Chart 1.

CLAIM CHART 1	
Claims 1, 2, 5, 8, 13-15 and 20	Abhyanker [Block Type]
coordinates.	
20. [20.1] The non-transient computer memory of claim 14, wherein said providing acts are provided over an internet interface.	Abhyanker: *See* discussion with respect to Claim 5 of Claim Chart 1.

Petitioner submits that Abhyanker anticipates each of the challenged claims of the '880 Patent because the disclosure of Abhyanker teaches each and every element of the claims of the '880 Patent. *See* M.P.E.P. § 2131. In particular, as discussed above, Abhyanker discloses "determining attributes of a roof structure of a real-world three-dimensional building," "providing at least one computer input field for a user to input first location data generally corresponding to the location of the building," "providing visual access to an aerial image of a region including the roof structure of the building corresponding to said first location data, the aerial image taken from a straight down overhead view with respect to the roof structure," "providing a visual marker that is moveable on a computer monitor around said region, said visual marker initially corresponding to said first location data, wherein said visual marker may be moved to a final location on top of the building to more precisely identify the location of the building roof structure, the final location having location coordinates," "providing a computer input capable of

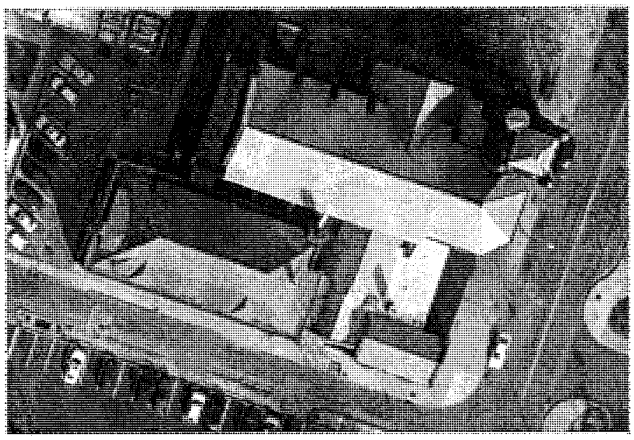
signaling user acceptance of the final location of said marker," and "providing visual access to one or more oblique images of an aerial imagery database corresponding to location coordinates of the final location," as recited or similarly recited in Claims 1 and 14. Accordingly, Abhyanker anticipates the teachings of the '880 Patent by disclosing each and every element of the challenged claims of the '880 Patent. *See* M.P.E.P. § 2131.

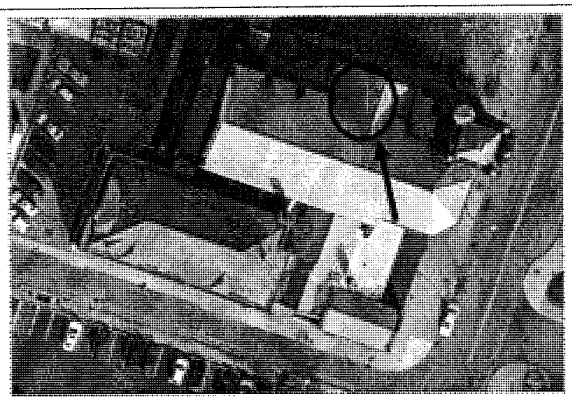
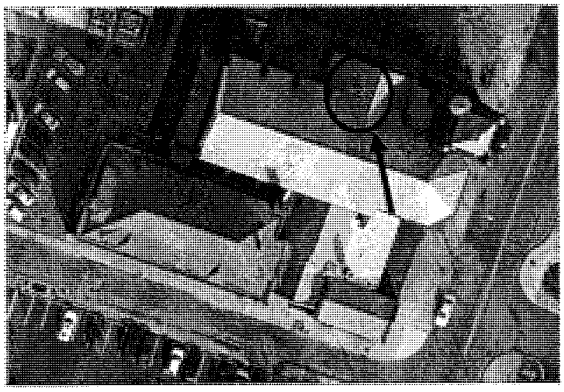
B. Claim Chart 2: Claims 1-10 and 13-20 of the '880 Patent are Unpatentable as Anticipated under 35 U.S.C. § 102(b) over Pictometry (Xactware Exhibit 1004) (Ground 2)

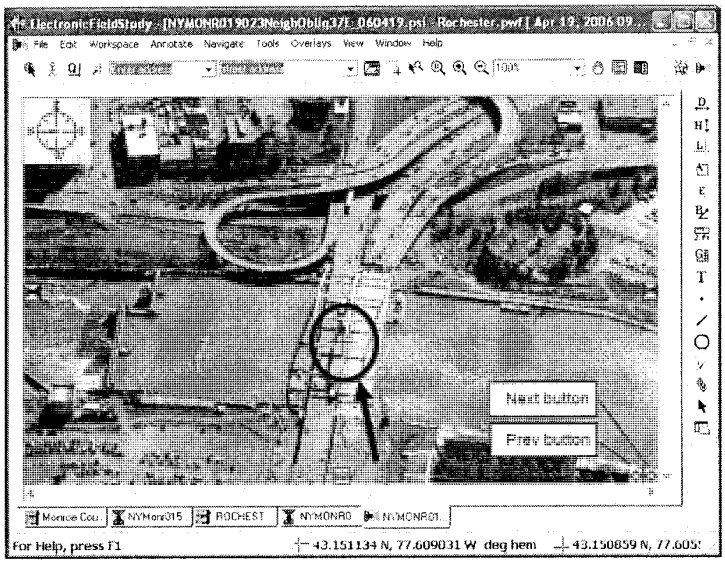
Pictometry discloses a system for displaying three-dimensional, real-world digital images in response to input of address data, and provides a movable marker associated with the input address data. *See*, e.g., a published manual by Pictometry International Corp., entitled "Pictometry Visual Intelligence, Electronic Field Study User Guide", Version 2.7 (July 2007) (Xactware Exhibit 1004); *see also* Pictometry, pp. 24, 27-28, 37, 49, 59, 73, 86, 78, 124; *see also* Schuch Decl., ¶ 48. More specifically, the system provides the ability to query a database of geo-referenced, digital images by inputting a street address, and outputting a digital image including a crosshair corresponding to a location of the queried street address. *See id.*; *see also* Schuch Decl., ¶¶ 49, 50. The digital image includes images of buildings having roof structures, the crosshair being positioned at or near the building for which the street address was input. *See*, e.g., Pictometry, p. 49;

FIG. 2-7; *see also* Schuch Decl., ¶ 50. The crosshair is moved relative to the building by panning within the image, thereby relocating the crosshair to a new location that is different from the first location and has location coordinates associated therewith. *See*, e.g., Pictometry, pp. 59, 62, 73, 86, 124; FIG. 3-4; *see also* Schuch Decl., ¶ 51. An image viewing interface provides the user with multiple views (including oblique or perspective views) of the building associated with the new location of the crosshair. *See*, e.g., Pictometry, pp. 49, 133-135; FIG. 8-2; *see also* Schuch Decl., ¶ 53. Thus, as indicated in greater detail below, Pictometry discloses each and every element of the challenged claims of the '880 Patent.

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
1. [1.P] A process for determining attributes of a roof structure of a real-world three-dimensional building, comprising the acts of:	Pictometry discloses a process of providing aerial images of real-world buildings based on input of an address, and multiple features for analyzing the images, such as measuring portions of the roof of a building. *See*, e.g., pp. 36, 37, 47, 48, 197-199.
[1.1] providing at least one computer input	Pictometry discloses an Address Search toolbar that allows for "search[ing] for a land parcel by its street address", including fields, such as house or apartment number, street name, city,

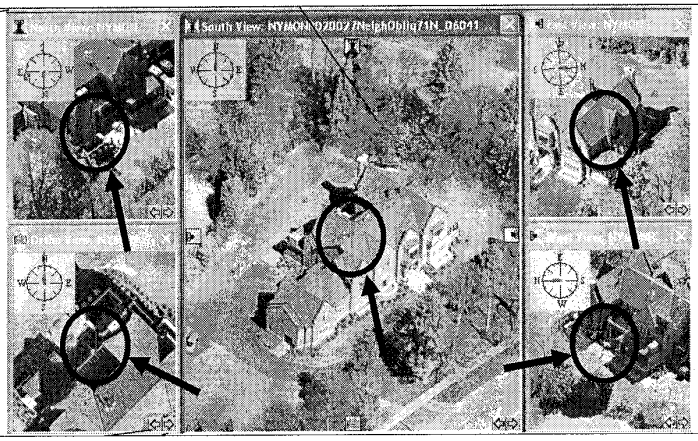
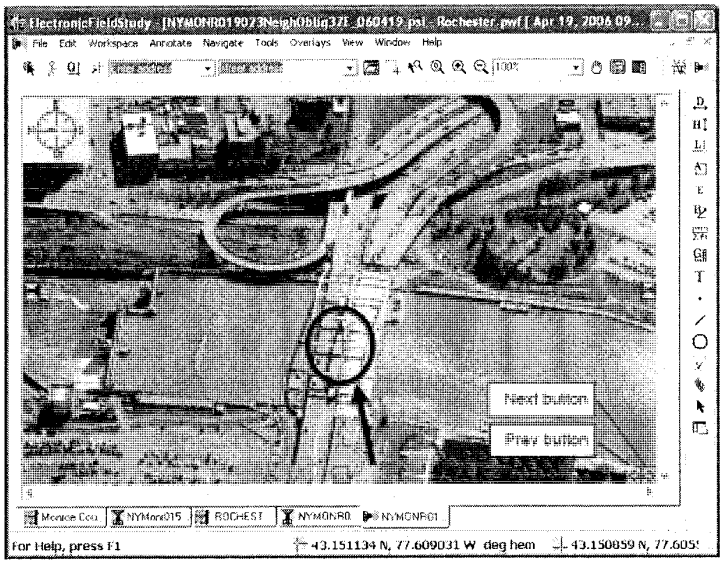
CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
field for a user to input first location data generally corresponding to the location of the building;	state and zip code. In particular, the Address Search toolbar can receive as input a street address of interest (i.e., first location data) corresponding to a building. *See*, e.g., pp. 24, 27, 28, 37, 78.
[1.2] providing visual access to an aerial image of a region including the roof structure of the building corresponding to said first location data, the aerial image taken from a straight down overhead view with respect to the roof structure;	Pictometry discloses providing an aerial image based on the address of interest input into the Address Search toolbar. The aerial image provides a view of the building corresponding to the address, including the roof structure. One of the aerial image types provided is an orthogonal image, which is taken "straight down" and includes the roof structure of buildings. *See*, e.g., p. 49; Figure 2-7 (reproduced below).  ***Figure 2-7**: Orthogonal image showing a building.*
[1.3] on the aerial image of the region, providing a visual marker that is moveable on a	Pictometry discloses an "Image window" in which images corresponding to the input address are shown and manipulated. Pictometry further discloses a Navigation Point in the form of a red crosshair that appears over the last point searched (i.e., the address input by the user). *See*, e.g., pp. 49, 59, 73, 86, 124; Figure 2-7 (annotated and reproduced below).

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
computer monitor around said region, said visual marker initially corresponding to said first location data,	 *Figure 2-7: Orthogonal image showing a building.*
[1.4] wherein said visual marker may be moved to a final location on top of the building to more precisely identify the location of the building roof structure,	Pictometry discloses moving the image in the Image window to reposition the Navigation Point over a different area of the image, thereby moving the Navigation Point to a new location. Upon moving the image, the Navigation Point (red crosshair) moves to the new point. The Navigation Point can be repositioned over a more precise area of the building roof structure. *See*, e.g., pp. 49, 124; Figure 2-7 (annotated and reproduced below).  *Figure 2-7: Orthogonal image showing a building.*
[1.5] the final location having location	Pictometry discloses that once a new location of the Navigation Point is set, the crosshair moves to that point and the point's coordinates are shown on the Status Bar. Therefore, the new

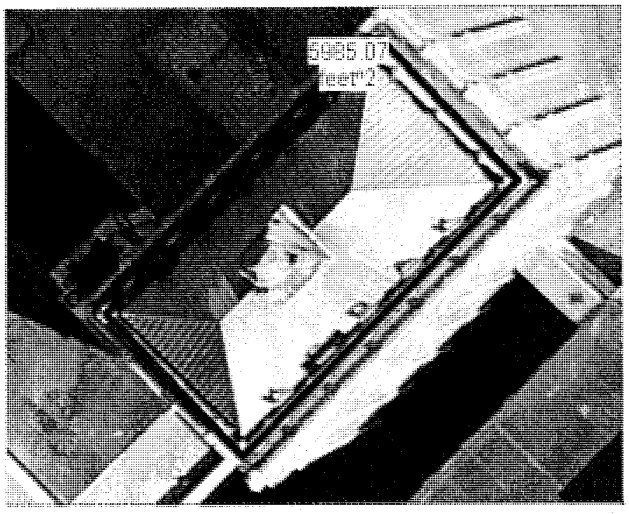
CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
coordinates;	location of the Navigation Point has geographic location coordinates. *See*, e.g., pp. 123, 124; Figure 7-8 (annotated and reproduced below).  ***Figure 7-8:*** *The Next and Prev buttons.*
[1.6] providing a computer input capable of signaling user-acceptance of the final location of said marker; and	Pictometry discloses that after repositioning the image such that the Navigation Point is located at the desired new location in the Image window, the user must either click "Center Navigation" or "Navigate and Set view center as Navigation Point" to reposition the crosshair of the Navigation Point at the new location. Doing so signals the user's acceptance of the new location of the Navigation Point. *See*, e.g., p. 124.

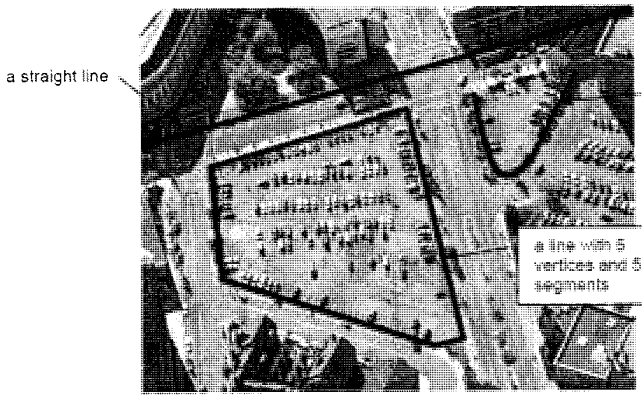
CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
	Centering the Navigation Point The Center Navigation feature allows you to reset the Navigation Point to the center of the view currently in the Image window. When you use the Center Navigation feature, EFS also searches for images at new Navigation Point. You might use this feature to refresh the Alternate View feature with new images that best show the area in the center of the active image. ◆ **To center the Navigation Point** 1. Position the active image so the point you want to become the new Navigation Point is in the center of the Image window. (To do so, use the Pan Tool, the scroll bars, or the rectangle on the Navigation window's thumbnail.) 2. Do *one* of the following: – Click **Center Navigation**. – or – Choose **Navigate**⇨**Set view center as navigation point**. The point currently in the center of the Image window is now the Navigation Point. The red crosshair moves to that point, a new search is done using that point, and the point's coordinates are shown on the Status Bar.
[1.7] providing visual access to one or more oblique images of an aerial imagery database corresponding to location coordinates of the final location.	Pictometry discloses providing various images of the desired location to a user, with one image type being oblique images "taken at an angle." Pictometry further discloses a PentaView feature which provides multiple different views, including various oblique images, of the location of interest. Each of the oblique images includes the Navigation Point positioned over the selected location. In particular, Pictometry discloses that alternate views (e.g., views in PentaView) are refreshed with new images that correspond to the repositioned location of the crosshair. **Thus, the various PentaView images (including oblique images) are automatically updated when the Navigation Point is moved in the Image Window.** *See*, e.g., pp. 49, 133-135; Figure 8-2 (annotated and reproduced below) (emphasis added):

Attorney Docket No. 097171-00262

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
	
2. [2.1] The process of claim 1 and wherein said first location data comprised street address data, and wherein said location coordinates of said final location are translated to latitude and longitude coordinates.	Pictometry discloses that the initial search is done by inputting a street address. When the Navigation Point is repositioned into the desired location, the latitude and longitude coordinates are shown for the Navigation Point on the Status Bar. *See*, e.g., pp. 27, 28, 123, 124; Figure 7-8 (annotated and reproduced below).  *Figure 7-8: The Next and Prev buttons.*

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
3. [3.1] The process of claim 2 and wherein said image corresponding to the first location data is from a first imagery database from which said final location is selected and is internet-based imagery having a corresponding street address look up field, and wherein the aerial imagery database is a second imagery database, and further comprising the act of: using said latitude and longitude coordinates to access imagery from the	Pictometry discloses use of an Image Library that includes a plurality of images and geographic location data associated with the images. The Image Library can be stored on a network server and linked to the user via the Internet. Entry of a street address outputs an image from the Image Library. Repositioning the Navigation Point provides additional images from the Image Library corresponding to the new location. The oblique images provided in PentaView for the repositioned Navigation Point can be obtained from a different database or folder of the Image Library based on the latitude and longitude coordinates for the Navigation Point. *See*, e.g., pp. 19-24, 45-49, 133-135.

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
second imagery database.	
4. [4.1] The process of claim 3 and further comprising the act of: generating, in computer memory, outline drawings around outlines corresponding to roof planes based on tracing from said imagery from said second imagery database.	Pictometry discloses a measurement tool for taking measurements of structures in the image. One form of measurement is an area of a building at a roof edge, which generates an outline around the roof edge of the building shown in the image. *See*, e.g., p. 197 Figure (reproduced below).  Pictometry further discloses annotation overlays that overlap the image, one of the annotation overlays including lines that are used for outlining areas. *See*, e.g., pp. 213, 214, 226; Figure 12-4 (reproduced below). Although Figure 12-4 shows an annotation line overlapping a parking lot, one of ordinary skill in the art would understand that the annotation line can similarly be used to outline and overlap an image of a roof plane or structure.

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
	 *Figure 12-4: A freeform line, a straight line, and a line with 2 vertices and 3 segments.*
5. [5.1] The process of claim 4 and wherein said providing acts are provided over an internet interface.	Pictometry discloses an Image Library on a network server that inherently connects to the user via the internet. Providing the different images to the user and navigating the images therefore occurs over the internet. *See*, e.g., pp. 19-24.
6. [6.1] The process of claim 5 and further comprising the act of: providing a printed report that includes an aerial image of the building roof structure.	Pictometry discloses exporting images and data from the system in various formats, the exported printout being in the form of a document including an aerial image of a building (including the roof structure) and data corresponding to the image. *See*, e.g., pp. 155-168, 363.
7. [7.1] The	Pictometry: *See* discussion with respect to Claim 4 of Claim

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
process of claim 1 and further comprising the act of: generating, in computer memory, outline drawings around outlines corresponding to roof planes based on tracing from said imagery.	Chart 2.
8. [8.1] The process of claim 1 and wherein said providing acts are provided over an internet interface.	Pictometry: *See* discussion with respect to Claim 5 of Claim Chart 2.
9. [9.1] The process of claim 1 and further comprising the act of: providing a printed report that includes an aerial image of	Pictometry: *See* discussion with respect to Claim 6 of Claim Chart 2.

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
the building roof structure.	
10. [10.1] The process of claim 9 and wherein the printed report includes a latitude reference and/or a longitude reference corresponding to the location of the building roof structure.	Pictometry discloses that the printout of the image can include coordinate information which corresponds to the location of the building and the roof structure. Data that can be exported with the image includes data from the Location Tool, which incorporates the street address and/or latitude and longitude coordinates for the location of the building. *See*, e.g., pp. 165, 166, 363.
13. [13.1] The process of claim 1, further comprising providing visual access to the one or more images of the aerial imagery database corresponding to the final location data.	Pictometry discloses providing one or more images in PentaView from the Image Library corresponding to the repositioned location of the Navigation Point. *See*, e.g., pp. 133-135.
14. [14.P] A non-transient computer memory	Pictometry discloses a computer software that includes instructions for performing a process with computer hardware. The process involves providing aerial images of real-world, three-dimensional buildings based on input of an address, and

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
storing computer logic, that when executed by computer hardware causes the computer hardware to determine attributes of a roof structure of a real-world three-dimensional building by:	multiple features for analyzing the image, such as measuring portions of the roof of a building. *See*, e.g., pp. 36, 37, 47, 48, 197-199.
[14.1] providing at least one computer input field for a user to input first location data generally corresponding to the location of the building;	Pictometry: *See* discussion with respect to element 1.1 of Claim 1 of Claim Chart 2.
[14.2]providing visual access to an aerial image of a region including the roof structure of the building	Pictometry: *See* discussion with respect to element 1.2 of Claim 1 of Claim Chart 2.

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
corresponding to said first location data, the aerial image taken from a straight down overhead view with respect to the roof structure;	
[14.3] on the aerial image of the region, providing a visual marker that is moveable on a computer monitor around said region, said visual marker initially corresponding to said first location data,	Pictometry: *See* discussion with respect to element 1.3 of Claim 1 of Claim Chart 2.
[14.4] wherein said visual marker may be moved to a final location on top of the building to more precisely identify the	Pictometry: *See* discussion with respect to element 1.4 of Claim 1 of Claim Chart 2.

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
location of the building roof structure,	
[14.5] the final location having location coordinates;	Pictometry: *See* discussion with respect to element 1.5 of Claim 1 of Claim Chart 2.
[14.6] providing a computer input capable of signaling user-acceptance of the final location of said marker; and	Pictometry: *See* discussion with respect to element 1.6 of Claim 1 of Claim Chart 2.
[14.7] providing visual access to one or more oblique images of an aerial imagery database corresponding to location coordinates of the final location.	Pictometry: *See* discussion with respect to element 1.7 of Claim 1 of Claim Chart 2.
15. [15.1] The non-transient computer memory of claim 14,	Pictometry: *See* discussion with respect to Claim 2 of Claim Chart 2.

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
wherein said first location data comprised street address data, and wherein said location coordinates of said final location are translated to latitude and longitude coordinates.	
16. [16.1] The non-transient computer memory of claim 15, wherein said aerial image corresponding to the first location data is from a first imagery database from which said final location is selected and is internet-based imagery having a corresponding	Pictometry: *See* discussion with respect to Claim 3 of Claim Chart 2.

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
street address look up field, and wherein the aerial imagery database is a second imagery database, and wherein said computer logic when executed by computer hardware causes the computer hardware to: use said latitude and longitude coordinates to access imagery from the second imagery database.	
17. [17.1] The non-transient computer memory of claim 16, wherein said computer logic when executed by computer hardware	Pictometry: *See* discussion with respect to Claim 4 of Claim Chart 2.

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
causes the computer hardware to: generate, in computer memory, outline drawings around outlines corresponding to roof planes based on tracing from said imagery from said second imagery database.	
18. [18.1] The non-transient computer memory of claim 17, wherein said computer logic when executed by computer hardware causes the computer hardware to: provide a printed report that includes an aerial image of	Pictometry: *See* discussion with respect to Claim 6 of Claim Chart 2.

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
the building roof structure.	
19. [19.1] The non-transient computer memory of claim 14, wherein said computer logic when executed by computer hardware causes the computer hardware to: generate, in computer memory, outline drawings around outlines corresponding to roof planes based on tracing from said imagery.	Pictometry: *See* discussion with respect to Claim 4 of Claim Chart 2.
20. [20.1] The non-transient computer memory of claim 14, wherein said providing acts are provided	Pictometry: *See* discussion with respect to Claim 5 of Claim Chart 2.

CLAIM CHART 2	
Claims 1-10 and 13-20	Pictometry [Block Type]
over an internet interface.	

Petitioner submits that Pictometry anticipates each of the challenged claims of the '880 Patent because the disclosure of Pictometry teaches each and every element of the claims of the '880 Patent. *See* M.P.E.P. § 2131. In particular, as discussed above, Pictometry discloses "determining attributes of a roof structure of a real-world three-dimensional building," "providing at least one computer input field for a user to input first location data generally corresponding to the location of the building," "providing visual access to an aerial image of a region including the roof structure of the building corresponding to said first location data, the aerial image taken from a straight down overhead view with respect to the roof structure," "providing a visual marker that is moveable on a computer monitor around said region, said visual marker initially corresponding to said first location data, wherein said visual marker may be moved to a final location on top of the building to more precisely identify the location of the building roof structure, the final location having location coordinates," "providing a computer input capable of signaling user acceptance of the final location of said marker," and "providing visual access to one or more oblique images of an aerial imagery database

corresponding to location coordinates of the final location," as recited or similarly recited in Claims 1 and 14. Accordingly, Pictometry anticipates the teachings of the '880 Patent by disclosing each and every element of the challenged claims of the '880 Patent. *See* M.P.E.P. § 2131.

C. Claim Chart 3: Claims 4, 7, 17 and 19 of the '880 Patent are Unpatentable as Obvious under 35 U.S.C. § 103 over Abhyanker in view of Hsieh (Xactware Exhibits 1003 and 1005) (Ground 3)

As noted above, Abhyanker discloses a system of marker placement in a mapping environment. *See*, e.g., U.S. Patent Publication No. 2007/0220174 to Abhyanker (Xactware Exhibit 1003); *see also* Abhyanker, Abstract; *see also* Schuch Decl., ¶ 40. More specifically, the system provides the ability to query a database of geo-referenced, digital images by inputting a street address, and outputting a digital image of a mapping environment including a marker corresponding to the queried street address. *See*, e.g., Abhyanker, ¶¶ 0006, 0041; FIGS. 4A, 5; *see also* Schuch Decl., ¶ 41. The mapping environment includes images of buildings having roof structures, the marker being positioned adjacent to the roof structure of the building for which the street address was input. *See*, e.g., Abhyanker, ¶¶ 0041-0043, 0089; FIG. 4A; *see also* Schuch Decl., ¶ 42. A drag and drop algorithm is implemented to allow the user to reposition the marker in a more precise location for the street address, such as over the roof structure of the building corresponding to the street address. *See*, e.g., Abhyanker, ¶¶ 0005, 0011,

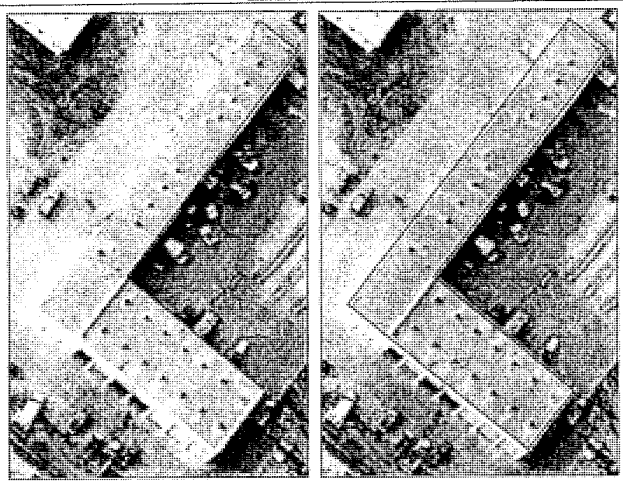
0042; FIG. 4A; *see also* Schuch Decl., ¶ 43. The repositioned location of the marker includes geographic coordinates associated with the new location, and a locking module is used to accept and save the new location of the marker in the mapping environment. *See*, e.g., Abhyanker, ¶¶ 0010, 0064, 0071, 0096; *see also* Schuch Decl., ¶ 44. Abhyanker discloses providing images of the buildings with the roof structures from a top down view and/or oblique views for the initial position of the marker and the repositioned location of the marker. *See*, e.g., Abhyanker, ¶ 0089; FIGS. 1, 4, 5, 7, 9; *see also* Schuch Decl., ¶ 46.

Hsieh discloses an automated and semi-automated site modeling system that can model roofs having a plurality of roof sections using one or more aerial images. *See*, e.g., Publication by Hsieh, entitled "Design and Evaluation of a Semi-Automated Site Modeling System," Carnegie Mellon, November 1995 ("Hsieh") (Xactware Exhibit 1005); *see also* Hsieh, Abstract; *see also* Schuch Decl., ¶ 56. More specifically, the system provides the ability to construct and manipulate three-dimensional building models using multiple images. *See* e.g., Hsieh, Abstract, p. 1; *see also* Schuch Decl., ¶ 58. The semi-automated site modeling system can require user input to supply the automated processes. *See*, e.g., Hsieh, p. 1. In Hsieh, the system can detect peak roof building models, which require at least two roof planes. *See*, e.g., Hsieh, p. 6; *see also* Schuch Decl., ¶ 59. To model roofs in Hsieh the user measures the roof of a building in one aerial

image by outlining the roof in that aerial image. The system then detects peaks, edges, and other roof features in the image, and generates a full three-dimensional (3D) model of the building (including the roof). The system also projects the 3D model onto other aerial images of the building. *See*, e.g., Hsieh, p. 6; *see also* Schuch Decl., ¶ 60.

A person of ordinary skill in the art would have found it obvious to combine the image and location marker manipulation system of Abhyanker with the three-dimensional modeling system of Hsieh. *See* Schuch Decl., ¶¶ 47, 61. Accordingly, a person of ordinary skill in the art would have found it obvious to combine the systems of Abhyanker and Hsieh to allow for generation of an outline of a roof plane or structure in the image and location marker manipulation system.

CLAIM CHART 3	
Claims 4, 7, 17 and 19	Abhyanker [Block Type] in view of *Hsieh [Italics Type]*
4. The process of claim 3 and further comprising the act of: generating, in computer memory, outline drawings around outlines corresponding to roof planes based on tracing from said imagery from said second imagery database.	Abhyanker: *See* discussion with respect to elements 1.P-1.7 of Claim 1 of Claim Chart 1. *Hsieh discloses a three-dimensional modeling system that receives as input one or more aerial images and generates a three-dimensional outline model of the building (including the roof) over the image. The system also projects the three-dimensional outline model onto other aerial images of the building. See, e.g., Hsieh, pp. 6, 8; Figure 3 (reproduced below).*

CLAIM CHART 3	
Claims 4, 7, 17 and 19	Abhyanker [Block Type] in view of *Hsieh [Italics Type]*
	 (a) Measure the first four roof points in radt9 image (b) Measured roof in radt9 image Figure 3: Measuring the roof of a flat roof building in one image
7. [7.1] The process of claim 1 and further comprising the act of: generating, in computer memory, outline drawings around outlines corresponding to roof planes based on tracing from said imagery.	Abhyanker: *See* discussion with respect to Claim 4 of Claim Chart 3. *Hsieh: See discussion with respect to Claim 4 of Claim Chart 3.*
17. [17.1] The non-transient computer memory of claim 16, wherein said computer logic when executed by computer hardware causes the computer hardware to: generate, in computer memory, outline drawings around outlines	Abhyanker: *See* discussion with respect to Claim 4 of Claim Chart 3. *Hsieh: See discussion with respect to Claim 4 of Claim Chart 3.*

CLAIM CHART 3	
Claims 4, 7, 17 and 19	Abhyanker [Block Type] in view of *Hsieh [Italics Type]*
corresponding to roof planes based on tracing from said imagery from said second imagery database.	
19. [19.1] The non-transient computer memory of claim 14, wherein said computer logic when executed by computer hardware causes the computer hardware to: generate, in computer memory, outline drawings around outlines corresponding to roof planes based on tracing from said imagery.	Abhyanker: *See* discussion with respect to Claim 4 of Claim Chart 3. *Hsieh: See discussion with respect to Claim 4 of Claim Chart 3.*

It would have been obvious to a person of ordinary skill in the art to include roof outline modeling generation, as taught by Hsieh, with the system of Abhyanker for incorporation of roof outlines into the image. Accordingly, there is a rationale for supplementing the teachings of Abhyanker by those of Hsieh under each of M.P.E.P. §§ 2143(I)(A), (C), (G), as discussed in more detail below.

Under M.P.E.P. § 2143(I)(A), a person of ordinary skill in the art would have found it obvious to incorporate the outline model generation of Hsieh with the image manipulation and marker repositioning system of Abhyanker as doing so would be combining prior art elements according to known methods to yield

predictable results. Together, Abhyanker and Hsieh disclose the claim elements discussed in the claim chart above. *See*, e.g., M.P.E.P. § 2143(I)(A)(1). A person of ordinary skill in the art could have combined the elements as claimed by electronically incorporating the outline model generation feature of Hsieh into the image manipulation and marker repositioning system of Abhyanker. *See*, e.g., M.P.E.P. § 2143(I)(A)(2). A person of ordinary skill in the art would have recognized that the results of the combination were predictable, as Abhyanker would function as originally intended after the model generation feature of Hsieh was imported. *See*, e.g., M.P.E.P. § 2143(I)(A)(3).

Under M.P.E.P. § 2143(I)(C), a person of ordinary skill in the art would have found it obvious to incorporate the outline model generation of Hsieh with the image manipulation and marker repositioning system of Abhyanker as doing so would amount to using known techniques to improve similar devices in the same way. Petitioner submits that Abhyanker is the base device that was known in the art. Hsieh improves the system of Abhyanker by providing outline model generation functionality. *See*, e.g., Hsieh, pp. 6, 8. One of ordinary skill in the art could have applied the functionality of Hsieh in the base device of Abhyanker with predictable results. *See*, e.g., M.P.E.P. § 2143(I)(C).

Under M.P.E.P. § 2143(I)(G), a person of ordinary skill in the art would have found it obvious to incorporate the outline model generation of Hsieh with the

image manipulation and marker repositioning system of Abhyanker, as Abhyanker provides a teaching, suggestion, or motivation to do so. Petitioner submits that the figures of Abhyanker illustrate outlines of building structures. *See*, e.g., Abhyanker, Figs. 1, 4, 5; *see also*, e.g., M.P.E.P. § 2143(I)(G)(1). Further, there was a reasonable expectation of success that Hsieh would be able to provide the outline model generation functionality using the image manipulation and marker repositioning system taught by Abhyanker. *See*, e.g., M.P.E.P. § 2143(I)(G)(2).

Petitioner notes that the inclusion of outline model generation in an image manipulation and marker repositioning system (as in Claims 4, 7, 17 and 19) is a mere matter of design choice, and should be afforded no patentable weight. *See*, e.g., M.P.E.P. § 2144.04(I) citing *In re Seid*, 161 F.2d 229, 73 USPQ 431 (CCPA 1947) ("The court found that matters relating to ornamentation only which have no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art.").

D. Claim Chart 4: Claims 4, 7, 17 and 19 of the '880 Patent are Unpatentable as Obvious under 35 U.S.C. § 103 over Pictometry (Xactware Exhibit 1004) in view of Hsieh (Xactware Exhibit 1005) (Ground 4)

Pictometry discloses a system for displaying three-dimensional, real-world digital images in response to input of address data, and provides a movable marker associated with the input address data. *See*, e.g., a published manual by Pictometry

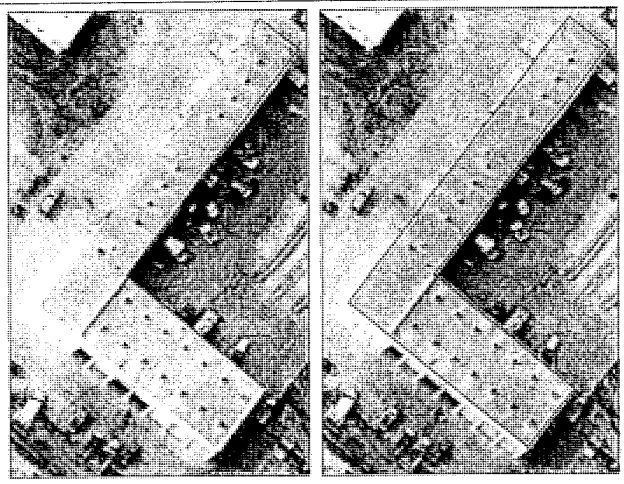
International Corp., entitled "Pictometry Visual Intelligence, Electronic Field Study User Guide", Version 2.7 (July 2007) (Xactware Exhibit 1004); *see also* Pictometry, pp. 24, 27-28, 37, 49, 59, 73, 86, 78, 124; *see also* Schuch Decl., ¶ 48. More specifically, the system provides the ability to query a database of geo-referenced, digital images by inputting a street address, and outputting a digital image including a crosshair corresponding to a location of the queried street address. *See id.*; *see also* Schuch Decl., ¶¶ 49, 50. The digital image includes images of buildings having roof structures, the crosshair being positioned at or near the building for which the street address was input. *See*, e.g., Pictometry, p. 49; FIG. 2-7; *see also* Schuch Decl., ¶ 50. The crosshair is moved relative to the building by panning within the image, thereby relocating the crosshair to a new location that is different from the first location and has location coordinates associated therewith. *See*, e.g., Pictometry, pp. 59, 62, 73, 86, 124; FIG. 3-4; *see also* Schuch Decl., ¶ 51. An image viewing interface provides the user with multiple views (including oblique or perspective views) of the building associated with the new location of the crosshair. *See*, e.g., Pictometry, pp. 49, 133-135; FIG. 8-2; *see also* Schuch Decl., ¶ 53. The system of Pictometry also includes a measurement tool for taking measurements of structures in the digital image, use of the measurement tool resulting in an outline of building features (such as a roof

edge) displaying the area or distance measured. *See*, e.g., Pictometry, p. 197; *see also* Schuch Decl., ¶ 54.

Hsieh discloses an automated and semi-automated site modeling system that can model roofs having a plurality of roof sections using one or more aerial images. *See*, e.g., Publication by Hsieh, entitled "Design and Evaluation of a Semi-Automated Site Modeling System," Carnegie Mellon, November 1995 ("Hsieh") (Xactware Exhibit 1005); *see also* Hsieh, Abstract; *see also* Schuch Decl., ¶ 56. More specifically, the system provides the ability to construct and manipulate three-dimensional building models using multiple images. *See* e.g., Hsieh, Abstract, p. 1. The semi-automated site modeling system can require user input to supply the automated processes. *See*, e.g., Hsieh, p. 1; *see also* Schuch Decl., ¶ 58. In Hsieh, the system can detect peak roof building models, which require at least two roof planes. *See*, e.g., Hsieh, p. 6; *see also* Schuch Decl., ¶ 59. To model roofs in Hsieh the user measures the roof of a building in one aerial image by outlining the roof in that aerial image. The system then detects peaks, edges, and other roof features in the image, and generates a full three-dimensional (3D) model of the building (including the roof). The system also projects the 3D model onto other aerial images of the building. *See*, e.g., Hsieh, p. 6; *see also* Schuch Decl., ¶ 60.

A person of ordinary skill in the art would have found it obvious to combine the image and location marker manipulation system of Pictometry with the three-dimensional modeling system of Hsieh. *See* Schuch Decl., ¶¶ 55, 61. Accordingly, a person of ordinary skill in the art would have found it obvious to combine the systems of Pictometry and Hsieh to allow for generation of an outline of a roof plane or structure in the image and location marker manipulation system.

CLAIM CHART 4	
Claims 4, 7, 17 and 19	Pictometry [Block Type] in view of *Hsieh [Italics Type]*
4. The process of claim 3 and further comprising the act of: generating, in computer memory, outline drawings around outlines corresponding to roof planes based on tracing from said imagery from said second imagery database.	Pictometry: *See* discussion with respect to elements 1.P-1.7 of Claim 1 of Claim Chart 2. *Hsieh discloses a three-dimensional modeling system that receives as input one or more aerial images and generates a three-dimensional outline model of the building (including the roof) over the image. The system also projects the three-dimensional outline model onto other aerial images of the building. See, e.g., Hsieh, pp. 6, 8; Figure 3 (reproduced below).*

CLAIM CHART 4	
Claims 4, 7, 17 and 19	Pictometry [Block Type] in view of *Hsieh [Italics Type]*
	 (a) Measure the first four roof points in radt9 image (b) Measured roof in radt9 image Figure 3: Measuring the roof of a flat roof building in one image
7. [7.1] The process of claim 1 and further comprising the act of: generating, in computer memory, outline drawings around outlines corresponding to roof planes based on tracing from said imagery.	Pictometry: *See* discussion with respect to Claim 4 of Claim Chart 4. *Hsieh: See discussion with respect to Claim 4 of Claim Chart 4.*
17. [17.1] The non-transient computer memory of claim 16, wherein said computer logic when executed by computer hardware causes the computer hardware to: generate, in computer memory, outline drawings around outlines	Pictometry: *See* discussion with respect to Claim 4 of Claim Chart 4. *Hsieh: See discussion with respect to Claim 4 of Claim Chart 4.*

CLAIM CHART 4	
Claims 4, 7, 17 and 19	Pictometry [Block Type] in view of *Hsieh [Italics Type]*
corresponding to roof planes based on tracing from said imagery from said second imagery database.	
19. [19.1] The non-transient computer memory of claim 14, wherein said computer logic when executed by computer hardware causes the computer hardware to: generate, in computer memory, outline drawings around outlines corresponding to roof planes based on tracing from said imagery.	Pictometry: *See* discussion with respect to Claim 4 of Claim Chart 4. *Hsieh: See discussion with respect to Claim 4 of Claim Chart 4.*

It would have been obvious to a person of ordinary skill in the art to include roof outline modeling generation, as taught by Hsieh, with the system of Pictometry for incorporation of roof outlines into the image. Accordingly, there is a rationale for supplementing the teachings of Pictometry by those of Hsieh under each of M.P.E.P. §§ 2143(I)(A), (C), (G), as discussed in more detail below.

Under M.P.E.P. § 2143(I)(A), a person of ordinary skill in the art would have found it obvious to incorporate the outline model generation of Hsieh with the image manipulation and marker repositioning system of Pictometry as doing so would be combining prior art elements according to known methods to yield

predictable results. Together, Pictometry and Hsieh disclose the claim elements discussed in the claim chart above. *See*, e.g., M.P.E.P. § 2143(I)(A)(1). A person of ordinary skill in the art could have combined the elements as claimed by electronically incorporating the outline model generation feature of Hsieh into the image manipulation and marker repositioning system of Pictometry. *See*, e.g., M.P.E.P. § 2143(I)(A)(2). A person of ordinary skill in the art would have recognized that the results of the combination were predictable, as Pictometry would function as originally intended after the model generation feature of Hsieh was imported. *See*, e.g., M.P.E.P. § 2143(I)(A)(3).

Under M.P.E.P. § 2143(I)(C), a person of ordinary skill in the art would have found it obvious to incorporate the outline model generation of Hsieh with the image manipulation and marker repositioning system of Pictometry as doing so would amount to using known techniques to improve similar devices in the same way. Petitioner submits that Pictometry is the base device that was known in the art. Hsieh improves the system of Pictometry by providing outline model generation functionality. *See*, e.g., Hsieh, pp. 6, 8. One of ordinary skill in the art could have applied the functionality of Hsieh in the base device of Pictometry with predictable results. *See*, e.g., M.P.E.P. § 2143(I)(C)(3).

Under M.P.E.P. § 2143(I)(G), a person of ordinary skill in the art would have found it obvious to incorporate the outline model generation of Hsieh with the

image manipulation and marker repositioning system of Pictometry, as Pictometry provides a teaching, suggestion, or motivation to do so. In support of this rejection, Petitioner submits that Pictometry teaches a measurement tool that generates an outline of structures being measured and an annotation tool including annotation lines for generating outlines of structures. *See*, e.g., Pictometry, pp. 197, 213, 214, 226; *see also*, e.g., M.P.E.P. § 2143(I)(G)(1). Further, there was a reasonable expectation of success that Hsieh would be able to provide the outline model generation functionality using the image manipulation and marker repositioning system taught by Pictometry. *See*, e.g., M.P.E.P. § 2143(I)(G)(2).

Petitioner notes that the inclusion of outline model generation in an image manipulation and marker repositioning system (as in Claims 4, 7, 17 and 19) is a mere matter of design choice, and should be afforded no patentable weight. *See*, e.g., M.P.E.P. § 2144.04(I) citing *In re Seid*, 161 F.2d 229, 73 USPQ 431 (CCPA 1947) ("The court found that matters relating to ornamentation only which have no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art.").

XIII. CONCLUSION AND FEE AUTHORIZATION

For the reasons discussed hereinabove, Xactware has demonstrated a likelihood of prevailing with respect to at least one claim of the '880 Patent.

Accordingly, Xactware respectfully petitions that the Board institute an *inter partes* review of all claims of the '880 Patent.

The Commissioner is authorized to charge the fee as set forth in 35 U.S.C. § 312(a) and 37 CFR §§ 42.100(a), 42.103(a), and 42.15(a), e.g., $24,200, to Deposit Account No. 503571. If any additional and/or other fees are due in connection with the submission of this Request, or if any credit is due, the Commissioner is hereby authorized to charge and/or credit them to Deposit Account No. 503571.

2/8/2016
Dated

By: Mark E. Nikolsky (Lead Counsel)
Reg. No. 48,319

2/8/16
Dated

By: Vadim E. Cherkasov (Back-up Counsel)
Reg. No. 65,243

Joseph G. Monaghan
Reg. No. 66,022
Amit R Parikh
Reg. No. 65,271
Timothy P. Homlish
Reg. No. 66,174

Attorneys for Xactware, Inc.
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, New Jersey 07102

XIV. CERTIFICATE OF SERVICE

I hereby certify that true and complete copies of this Request for *Inter Partes* Review of U.S. Patent No. 8,542,880, including this Certificate of Service, and including all Exhibits as identified below, have been served on DUNLAP CODDING, P.C. by mailing same on February 8, 2016, via First Class Mail (Express Mail), postage prepaid to DUNLAP CODDING, P.C., P.O. BOX 16370, OKLAHOMA CITY, OK 73113.

- Enclosure – Cover Letter;
- Request for *Inter Partes* Review of U.S. Patent No. 8,542,880, including Exhibits 1001-1006 attached thereto, namely, the following:

EXHIBIT 1001:	U.S. Patent No. 8,542,880 to Thornberry issued September 24, 2013
EXHIBIT 1002:	Power of Attorney
EXHIBIT 1003:	U.S. Patent Publication No. 2007/0220174 to Abhyanker, published September 20, 2007
EXHIBIT 1004:	Publication entitled "Pictometry Visual Intelligence, Electronic Field Study User Guide", Version 2.7, (July 2007) ("Pictometry")
EXHIBIT 1005:	Publication by Hsieh, entitled "Design and Evaluation of a Semi-Automated Site Modeling System," Carnegie Mellon, November 1995 ("Hsieh")
EXHIBIT 1006:	Declaration of Harold Schuch ("Schuch Decl.")

Attorney Docket No. 097171-00262

2/8/2016
Dated

By: Mark E. Nikolsky (Lead Counsel)
Reg. No. 48,319

2/8/16
Dated

By: Vadim E. Cherkasov (Back-up Counsel)
Reg. No. 65,243

Joseph G. Monaghan
Reg. No. 66,022
Amit R Parikh
Reg. No. 65,271
Timothy P. Homlish
Reg. No. 66,174

Attorneys for Xactware, Inc.
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, New Jersey 07102

Certificate of Service ii

ME1 21490820v.3

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. IPR2016-00591

Patent No. 8,209,152

PATENT OWNER'S PRELIMINARY RESPONSE

TABLE OF CONTENTS

Page

I. Introduction....1

II. Overview of the Claimed Inventions....1

III. Claim Construction....3

A. Legal Standard....3

B. Terms Proposed by Petitioner....3

IV. Standard for Granting *Inter Partes Review*....11

V. Redundancy of Petitioner's Grounds....13

VI. Petitioner Fails to Demonstrate a Reasonable Likelihood That It Will Prevail....14

A. Petitioner Does Not Demonstrate That Hsieh And AppliCad Are Prior Art....14

B. Petitioner Articulates No Reasonable Rationale For Combining The References For Any Of The Six Obviousness Grounds....20

C. Ground 1: Hsieh Does Not Anticipate Any Of The Challenged Claims....38

D. Ground 2: The Combination Of Hsieh And Perlant Does Not Render Claim 10 Obvious....51

E. Ground 3: The Combination of Hsieh And AppliCad Does Not Render Claim 25 Obvious....56

F. Ground 4: The Combination Of Hsieh And Aerowest Does Not Render Claim 15 Obvious....56

G. Ground 5: Avrahami Does Not Anticipate Any Of The Challenged Claims....57

H. Ground 6: The Combination Of Avrahami And Perlant Does Not Render Claim 10 Obvious....66

I. Ground 7: The Combination Of Avrahami And AppliCad Does Not Render Claim 25 Obvious 66

J. Ground 8: The Combination Of Avrahami And Aerowest Does Not Render Claim 15 Obvious 67

VII. Conclusion 67

TABLE OF AUTHORITIES

Page(s)

Cases

505 Games, Inc. v. Babbage Holdings, Inc.,
IPR2014-00954, Paper No. 24 (Dec. 15, 2014).....6, 8

Allergan, Inc. v. Sandoz Inc.,
796 F.3d 1293 (Fed. Cir. 2015) 45

Apple, Inc. v. DSS Tech. Mgmt., Inc.,
IPR2015-00369, Paper No. 14 (Aug. 12, 2015) 15, 18

Bd. of Regents of the Univ. of Texas Sys. v. BENQ Am. Corp.,
533 F.3d 1362 (Fed. Cir. 2008) 7

Blue Calypso LLC v. Groupon, Inc.,
815 F.3d 1331 (Fed. Cir. 2016) 19

BMC Medical Co. Ltd. v. ResMed Ltd.,
IPR2013-01363, Paper No. 25 (Jan. 20, 2016).....45

CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co.,
224 F.3d 1308 (Fed. Cir. 2000) 8

Cisco Systems, Inc. v. C-Cation Techs., LLC,
IPR2014-00454, Paper No. 12 (Aug. 29, 2014) 12

Corning Inc. v. DSM IP Assets B.V.,
IPR2013-00049, Paper No. 8 (May 9, 2014).....30

DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.,
567 F.3d 1314 (Fed. Cir. 2009) 37

EFF v. Personal Audio,
IPR2014-00070, Paper No. 21 (Apr. 18, 2014)..... 16, 19

Ex Parte Fenner Investments, Ltd.,
Appeal No. 2015-006923, 2015 WL 5317395 (P.T.A.B. Aug. 27, 2015) 7

Ex Parte Reinhold Burr,
No. 2009-002693, 2009 WL 3151048 (B.P.A.I. Sept. 29, 2009).....5

In re Bayer,
568 F.2d 1357 (C.C.P.A. 1978) 17

In re Cronyn,
890 F.2d 1158 (Fed. Cir. 1989) 15, 17

In re Fine,
837 F.2d 1071 (Fed. Cir. 1988) 51, 56, 66

In re Fritch,
972 F.2d 1260 (Fed. Cir. 1992) 48, 49, 62, 65

In re Lister,
583 F.3d 1307 (Fed. Cir. 2009) 17

In re NTP, Inc.,
654 F.3d 1279 (Fed. Cir. 2011) 3

In re Suitco Surface, Inc.,
603 F.3d 1255 (Fed. Cir. 2010) 3

Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.,
No. 2015-1693, 2016 WL 2620512 (Fed. Cir. May 9, 2016)..... 12, 13

InTouch Techs., Inc. v. VGO Commc'ns., Inc.,
751 F.3d 1327 (Fed. Cir. 2014) 23, 28

Lava Trading, Inc. v. Sonic Trading Mgmt., LLC,
445 F.3d 1348 (Fed. Cir. 2006) 9

Liberty Mutual Ins. Co. v. Progressive Casualty Ins. Co.,
CBM2012-00003, Paper No. 7 (Oct. 25, 2012)..... 13, 14

Merck & Co. v. Teva Pharm. USA, Inc.,
395 F.3d 1364 (Fed. Cir. 2005) 5, 8

Microsoft Corp. v. Proxyconn, Inc.,
789 F.3d 1292 (Fed. Cir. 2015) 3

Net MoneyIN, Inc. v. VeriSign, Inc.,
545 F.3d 1359 (Fed. Cir. 2008) 39, 58

Oxford Nanopore Technologies v. Univ. of Washington,
IPR2014-00513, Paper No. 12 (Sept. 15, 2014) 15

Power Mosfet Techs., L.L.C. v. Siemens AG,
378 F.3d 1396 (Fed. Cir. 2004) 5, 8

Purdue Pharma L.P. v. Depomed, Inc.,
No. 2015-2029, 2016 WL 1161229 (Fed. Cir. Mar. 24, 2016) ..... passim

Qualcomm v. ParkerVision,
IPR2015-01825, Paper No. 8 (PTAB Mar. 8, 2016) 18, 34, 35

Rothman v. Target Corp.,
556 F.3d 1310 (Fed. Cir. 2009) 37

Samsung Electronics Co. v. Rembrandt Wireless Techs., LP,
IPR2014-00514, Paper No. 18 (Sept. 9, 2014) 16

ServiceNow, Inc. v. Hewlett-Packard Co.,
IPR2015-00707, Paper No. 14 (Nov. 2, 2015) 18

Spears v. Holland,
Interf. No. 104,681, Paper No. 30 (B.P.A.I. Mar. 13, 2002) 12

Summit 6, LLC v. Samsung Elecs. Co.,
802 F.3d 1283 (Fed. Cir. 2015) 7

Symantec v. Trustees of Columbia Univ.,
IPR2015-00371, Paper No. 13 (June 17, 2015)..... 15, 17, 18

Tec Air, Inc. v. Denso Mfg. Mich. Inc.,
192 F.3d 1353 (Fed. Cir. 1999) 45

TRW Automotive US LLC v. Magna Elecs. Inc.,
IPR2014-00294, Paper No. 21 (Aug. 27, 2014) 29, 48, 62, 65

Zetec Inc. v. Westinghouse Electric Company LLC.,
IPR2014-00384, Paper No. 10 (July 23, 2014) 13

Statutes

35 U.S.C. § 102 39

35 U.S.C. § 314(a) 1, 12, 14, 15

35 U.S.C. § 314(b) 15

37 C.F.R. § 42.108(b) 12

37 C.F.R. § 42.108(c).....12

U.S. Patent No. 8,209,152..... passim

TABLE OF EXHIBITS

Exhibit No.	Description
2001	Weisstein, Eric W. "Combinatorics." *From* MathWorld - A Wolfram Web Resource. http://mathworld.wolfram.com/Combinatorics.html.

I. INTRODUCTION

Xactware Solutions, Inc.'s Petition should be denied. First, Petitioner has failed to make a threshold showing that Hsieh and AppliCad – references Petitioner relies on for five of the eight proposed grounds of the Petition – were publicly available "printed publications" prior to the '152 patent's priority date. Second, Petitioner offers no reasonable rationale for combining the references in any of its proposed obviousness combinations, *i.e.*, Grounds 2-4 and 6-8. Third, the combinations fail on the merits for numerous reasons as detailed in Sections VI.C-VI.J *infra*. Fourth, the Petition includes multiple redundant grounds that should not be instituted. Accordingly, Petitioner has not met its burden of showing a reasonable likelihood that it will prevail with respect to at least one of the challenged claims, and the Board should decline to institute trial. *See* 35 U.S.C. § 314(a).

II. OVERVIEW OF THE CLAIMED INVENTIONS

The '152 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* U.S. Patent No. 8,209,152 ("the '152 patent") (Ex. 1001) at 1:16-20. Generation of roof estimate report outputs tailored to the needs of roofers and insurance companies is central to the claimed inventions, as is the use

of corresponding line drawings to identify roof structure elements among multiple aerial images. Here, Petitioner proposes eight grounds of invalidity:

No.	Type	References	Challenged Claims
Ground 1	§ 102	Hsieh	1, 3, 6, 8-10, 12-16, 19, 22-23 & 25
Ground 2	§ 103	Hsieh and Perlant	10
Ground 3	§ 103	Hsieh and AppliCad	25
Ground 4	§ 103	Hsieh and Aerowest	15
Ground 5	§ 102	Avrahami	1, 3, 6, 9-10, 12-16, 19, 22-23 & 25
Ground 6	§ 103	Avrahami and Perlant	10
Ground 7	§ 103	Avrahami and AppliCad	25
Ground 8	§ 103	Avrahami and Aerowest	15

Petitioner has challenged 15 claims of the '152 patent, three of which are independent claims (1, 12, and 16). Each of the challenged independent claims is directed to technological steps associated with "generating a roof estimate report" from two aerial images by using corresponding line drawings to identify specific roof features in the building of a three-dimensional roof model. '152 patent at claims 1, 12, and 16. And the dependent claims add further requirements to those steps, including with respect to generating the "roof estimate report."

III. CLAIM CONSTRUCTION

A. Legal Standard

In giving claim terms their broadest reasonable construction, "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).

B. Terms Proposed by Petitioner

i. "reference grid"

Petitioner's construction – "a data structure to which one or more images are registered" (Pet. at 6) – fails to give meaning to the term "grid." Specifically, by suggesting that a "grid" can be any data structure, Petitioner's construction reads the word "grid" out of the claim term, and potentially allows for data structures that are in formats other than a grid. But that is not what is claimed.

As the specification uniformly confirms, the reference grid is a three-dimensional coordinate system which serves as a common reference for registering images. '152 patent at 3:12-16; 9:61-10:4. By associating coordinates on the images with coordinates on the reference grid, features on the images can be included in the 3D model produced by the system. *Id*. That the reference grid is a coordinate system for the 3D model is explicitly confirmed in the specification:

> [I]mage registration includes determining a transformation between each of one or more images and a uniform 3D reference grid. ***The uniform 3D reference grid is used as a coordinate system for a 3D model of the roof***. By registering multiple images to the reference grid, an operator may indicate a roof feature on an image (such as a roof edge), which may then be translated from the coordinate system of the image to the coordinate system of the reference grid, for purposes of including of the indicated feature in the 3D model.

Id. at 9:62-10:4. This is not an isolated instance – the specification consistently confirms that the reference grid is a three-dimensional coordinate system, and not merely any form of "data structure" as Petitioner contends. *Id.* at 9:61-10:4 (describing a "***uniform 3D reference grid***")[1]; 20:61-66 (registering aerial images to "***a single, uniform reference grid***."). According to the specification, the three-dimensional coordinate system is necessary for generating the three-dimensional

[1] Emphasis supplied unless otherwise noted.

model. *Id*. at 9:65-10:4. And, the claimed "marker" – which allows for identification of a feature on multiple images included in the model –specifies three-dimensional coordinates (X, Y, and Z axes) on the reference grid. *Id*. at 10:5-11.

Petitioner's proposed construction unnecessarily broadens the claim scope and is inconsistent with the plain language of the claim – a "reference grid" is a specific type of data structure – *i.e.*, a three-dimensional coordinate system as repeatedly confirmed in the specification – that is required to specifically "correspond[] to the three-dimensional model." *See* '152 patent at claim 10. This introduces an unnecessary ambiguity into a claim term that, in its original form, requires no further construction. Moreover, where, as here, Petitioner's proposed construction fails to "give[] meaning to all the terms of the claim" – in this case, the term "grid" – it 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) ("interpretations 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 No. 24 (Dec. 15, 2014) at 6 ("We see no reason to read this term out of the claim.").

Petitioner alleges that its construction is supported by the specification, but fails to provide any actual explanation for how its citation to the general description of one example embodiment supports in any way its proposed construction. *See* Pet. at 6-7. Similarly, Petitioner's reliance on conclusory and wholly unsupported expert testimony – Dr. Schuch provides a total of two sentences on the "reference grid" but no citations to the specification – should be disregarded. *See* Ex. 1007 at ¶ 36 (stating only that "[a] person of ordinary skill in the art would understand the term 'reference grid' to mean a data structure to which one or more aerial images are registered.").

To the extent the Board is inclined to construe the term "reference grid," such a construction must ensure that this limitation pertains to a three-dimension coordinate system, not merely any data structure.

ii. "roof estimate report"

Petitioner's proposed construction of "roof estimate report" is also incorrect and should be rejected because no construction is needed. The term "roof estimate report" is easily understood by plain and ordinary meaning: a report generated by the roof estimation system. Although there are additional requirements for the roof estimate report, those are found explicitly in the claim language, relating to the

specific contents of the report. *See, e.g.*, '152 patent at claims 12 ("A computing system for generating a roof estimate report [including] roof measurement information based at least in part on the modified three-dimensional model"), 25 (same). As such, no further definition is needed beyond the explicit claim language. *See Summit 6, LLC v. Samsung Elecs. Co.*, 802 F.3d 1283, 1291 (Fed. Cir. 2015); *Ex Parte Fenner Investments, Ltd.*, Appeal No. 2015-006923, 2015 WL 5317395, at *4 (P.T.A.B. Aug. 27, 2015).

Petitioner's proposed construction – that a "roof estimate report" should be construed as "a representation of a roof which allows measurement information of at least one feature of the roof to be conveyed" (Pet. at 7) – improperly modifies the unambiguous claim language and is inconsistent with the specification. First, Petitioner's proposed construction eliminates the requirement that the claimed "roof estimate report" be an actual "report." Nowhere in Petitioner's construction does it reference the critical "report" requirement of the claims at issue, or anything resembling a report. Instead, Petitioner substitutes the claimed "report" with a "representation of a roof." Pet. at 7. But "representations" – such as the claimed roof model or aerial images – are explicitly contrasted in the claim language with the separately claimed "report" that is generated ***based on those items***, and is accordingly improper. *Bd. of Regents of the Univ. of Texas Sys. v. BENQ Am. Corp.*, 533 F.3d 1362, 1371 (Fed. Cir. 2008) ("The fact that the claim

distinguishes between [one term] and [another term in the same claim] is significant," because "[d]ifferent claim terms are presumed to have different meanings."); *see also CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co.*, 224 F.3d 1308, 1317 (Fed. Cir. 2000).

For example, claim 25 recites "generating a roof estimate report ***based at least in part on the modified three-dimensional model*** [of the roof]," explicitly confirming that the claimed "report" is not the same as a "representation" of the roof (the "model") but is instead "based on" that representation. *See, e.g.*, '152 patent at claims 16 and 25; *see also id.* at claim 12. Similarly, claims 1, 12, and 16 explicitly distinguish between "modify[ing] a three-dimensional model of the roof" and subsequently "generating a roof estimate report". *See, e.g., id.* at claims 1 (separately reciting "generating a roof estimate report" and "modifying a three-dimensional model of the roof"), 12 (same), 16 (same). Petitioner's construction improperly conflates these requirements, by merging the "representation" steps of the claims involving roof "models" with the "report generation" steps. This would deprive key aspects of the claims of meaning – an approach which is never proper. *See Merck*, 395 F.3d at 1372; *Power Mosfet Techs.*, 378 F.3d at 1410; *505 Games, Inc.*, IPR2014-00954, Paper No. 24, at 6.

Petitioner's construction is also at odds with the specification, which repeatedly confirms – from the "Summary of Invention" on – that

"representations" of a roof (such as a model) are different from the claimed roof estimate report. For example, in the "Summary of the Invention" – just as in the claims – the specification explicitly confirms that the claimed "roof estimation report" is not the same as a "representation" of the roof (the "model") but is instead "based on" that representation. *See, e.g.*, '152 patent at 2:7-10, 2:66-67, 6:29-38.

But the explicit differences between "representations" and roof reports themselves do not end there. The specification states that "one or more of the models stored as model data 106 are provided directly to the customer or other computing system, ***without first being transformed into a report***." *Id*. at 7:17-26. Petitioner's construction is irreconcilably inconsistent with this embodiment, as the model itself would be a "report," and making it impossible to use a model without it "first being transformed into a report." *Id.* Such a construction – *i.e.,* that would exclude embodiments from the scope of the claims – is improper in these circumstances. *Lava Trading, Inc. v. Sonic Trading Mgmt., LLC,* 445 F.3d 1348, 1353-55 (Fed. Cir. 2006) (rejecting claim construction that "excludes embodiments disclosed in the specification").

Indeed, the specification describes in detail embodiments of the claimed roof estimate reports, which include a variety of qualities that go far beyond being a mere "representation of a roof which allows measurement information … to be conveyed." For example, the roof estimate report "typically includes one or more

plan (top-down) views of the model, annotated with numerical values for the slope, area, and/or lengths of the edges of at least some of the plurality of planar roof sections of the model of the roof," but can also include "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 (top, side, front, etc.)." *See, e.g.*, '152 patent at 6:36-46; Figs. 3A-3E. Generating roof reports also involves considerations for making the report "readable to a human user," "including automatically determining an optimal or near-optimal label font size, label position, and/or label orientation." *See id.* at 6:48-58. Moreover, the roof reports can even include such features as "determining a cost estimate, based on specified costs, such as those of materials, labor, transportation, etc." or "the attributes of the particular roof, such as area, pitch, etc." *Id*. at 6:59-67. By contrast, Petitioner's "representations" lack numerous features that the claims and specification explicitly identify as key aspects of the claimed reports.

The claims and specification also repeatedly confirm that other "representation[s] of a roof," such as aerial images, are separate from the actual report. *See, e.g.*, '152 patent at claims 1 (separately reciting "generating a roof estimate report" and "displaying a first and second aerial image"), 12 (same); *see also id*. at 2:54-57, 3:61-63. Petitioner's proposed construction would cover such aerial images as "representations" of the roof, a result that makes little sense given

the clear distinction between the images and the reports set forth in the claims and specification.

Petitioner's proposal also suffers from other problems. For example, although the claim language explicitly requires that the roof estimate report include certain features (such as measurements of the building), Petitioner's construction merely states that the representation "***allows*** measurement information of at least one feature of the roof to be conveyed." And, while Petitioner alleges that its construction is supported by the specification, it fails to explain how its citation to the description of one example embodiment justifies deviating from the explicit claim language and repeated statements in the specification setting out differences between the models and images on the one hand, and the roof estimation reports on the other. *See* Pet. at 7. Similarly, Petitioner's reliance on conclusory and wholly unsupported expert testimony – Dr. Schuch provides a total of two sentences but no citations to the specification – should be disregarded. *See* Ex. 1007 at ¶ 37.

At bottom, no further construction of "roof estimate report" is necessary. Certainly, the Board should not adopt Petitioner's proposal, which contradicts the claim language and conflicts with the description in the specification.

IV. STANDARD FOR GRANTING *INTER PARTES REVIEW*

A petition for *inter partes* review may only be granted when "the information presented in the petition … shows that there is a reasonable likelihood

that the petitioner would prevail with respect to at least one of the claims challenged in the petition." 35 U.S.C. § 314(a); *see also* 37 C.F.R. § 42.108(c). Petitioner bears the burden of showing the statutory threshold has been met. *See* Office Patent Trial Practice Guide, 77 Fed. Reg. 48756 (Aug. 14, 2012). In determining whether to institute an *inter partes* review, the Board may "deny some or all grounds for unpatentability for some or all of the challenged claims." 37 C.F.R. § 42.108(b); *see also* 35 U.S.C. § 314(a).

It is Petitioner's duty to provide sufficient grounds for the institution of a review "focus[ing] on concise, well organized, easy-to-follow arguments supported by readily identifiable evidence of record." *Cisco Systems, Inc. v. C-Cation Techs., LLC*, IPR2014-00454, Paper No. 12 (Aug. 29, 2014) at 11. "The Board will not take on the role of advocate for a party, trying to make out a case the party has not adequately stated." *See, e.g.*, Standing Order ¶ 121.5.2 (B.P.A.I. Mar. 8, 2011); *see also Spears v. Holland*, Interf. No. 104,681, Paper No. 30 (B.P.A.I. Mar. 13, 2002) at 15. Further, "[u]nlike district court litigation—where parties have greater freedom to revise and develop their arguments over time and in response to newly discovered material—the expedited nature of IPRs bring with it an obligation for petitioners to make their case in their petition to institute." *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, No. 2015-1693, 2016 WL 2620512, at *8 (Fed. Cir. May 9, 2016). "While the Board's requirements are

strict ones, they are requirements of which petitioners are aware when they seek to institute an IPR." *Id*.

V. REDUNDANCY OF PETITIONER'S GROUNDS

Petitioner's grounds of invalidity are horizontally and vertically redundant. *See Liberty Mutual Ins. Co. v. Progressive Casualty Ins. Co.*, CBM2012-00003, Paper No. 7 (Oct. 25, 2012).

Petitioner identifies both Hsieh (Ground 1) and Avrahami (Ground 5) as allegedly anticipating claims 1, 3, 6, 9-10, 12-16, 19, 22-23, and 25. These grounds are horizontally redundant because the Petition fails to identify what is missing between Grounds 1 and 5 that necessitates having both. The same is true for Grounds 2 and 6, Grounds 3 and 7, and Grounds 4 and 8 proposing different obviousness combinations for dependent claims 10, 25, and 15.

Petitioner fails to state the differences between challenged claims and the prior art. The invitation to the PTAB to embark on an examination of the patent, rather than an adjudication of fully developed grounds, is an abuse of PTAB resources and places an unfair undue burden on the Patent Owner. Accordingly, these grounds must be declined. *Zetec Inc. v. Westinghouse Electric Company LLC*, IPR2014-00384, Paper No. 10 (July 23, 2014) at 14.

Further, Petitioner's proposed grounds based on Hsieh (Ground 1) and the combinations of Hsieh with Perlant (Ground 2), AppliCad (Ground 3), and

Aerowest (Ground 4) are vertically redundant. "In the former case, fewer references than the entire combination are sufficient to render a claim obvious, and in the latter case the entire combination is relied on to render the same claim obvious." *Liberty Mutual Ins. Co.*, CBM2012-00003, Paper No. 7, at 3. The same is true of Petitioner's proposed grounds based on Avrahami (Ground 5) and the combinations of Avrahami with Perlant (Ground 6), AppliCad (Ground 7), and Aerowest (Ground 8). "There must be an explanation of why the reliance in part may be the stronger assertion as applied in certain instances **and** why the reliance in whole may also be the stronger assertion in other instances." *Id.* (emphasis in original). No such explanation exists for any of the proposed grounds.

VI. PETITIONER FAILS TO DEMONSTRATE A REASONABLE LIKELIHOOD THAT IT WILL PREVAIL

A. Petitioner Does Not Demonstrate That Hsieh And AppliCad Are Prior Art

i. Legal Standard for Establishing A Reference As Publicly Available Prior Art

Pursuant to 35 U.S.C. § 314(a), Petitioner has the burden to establish in its Petition a reasonable likelihood of success, including providing competent evidence sufficient for a threshold showing that the asserted references are "printed publications." *See Apple, Inc. v. DSS Tech. Mgmt., Inc.*, IPR2015-00369, Paper

No. 14 (Aug. 12, 2015) at 10 (citing 35 U.S.C. § 314(a)). But Petitioner has failed to establish the public accessibility of Hsieh and AppliCad and as such, the Board should not institute trial on Grounds 1, 2, 3, 4, and/or 7.

Public accessibility is the touchstone for determining whether a particular reference qualifies as a printed publication. *See SRI Int'l, Inc.*, 511 F.3d at 1194-95. The mere fact that a member of the interested public possibly could have accessed the document is not enough to establish public availability. *Id.* at 1196; *see also In re Cronyn*, 890 F.2d 1158, 1161 (Fed. Cir. 1989). Rather, a given reference is deemed publicly accessible upon a showing that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it. *See SRI Int'l, Inc.*, 511 F.3d at 1194-95.

Where a Petitioner fails to make a preliminary showing that the relied-upon art was publicly accessible, the Board routinely declines to institute trial as there is no reasonable likelihood that the petitioner will prevail. *See* 35 U.S.C. § 314(b); *Symantec v. Trustees of Columbia Univ.*, IPR2015-00371, Paper No. 13 (June 17, 2015) at 9 (declining to institute where Petitioner "failed to meet its burden of at least a preliminary showing" of public availability); *Oxford Nanopore Technologies v. Univ. of Washington*, IPR2014-00513, Paper No. 12 (Sept. 15, 2014) at 17-18 (declining to institute where Petitioner did not show a "reasonable likelihood" that references constituted prior art).

Conclusory statements concerning public availability, such as those presented here, are insufficient. Rather, the Board requires petitioners to bring forth legitimate evidence of public availability before instituting trial. For example, in *Samsung Electronics Co. v. Rembrandt Wireless Techs., LP*, the Board found no public availability where the petitioner's declarant addressed only whether any person could conceivably have accessed the publication, and not whether an ordinarily skilled individual, exercising reasonable diligence would have found it. *See* IPR2014-00514, Paper No. 18 (Sept. 9, 2014) at 9-10. In *EFF v. Personal Audio*, the Board found that neither of the petitioner's declarants addressed how one of ordinary skill, exercising reasonable diligence, would have been able to find the Internet address of the prior art reference. *See* IPR2014-00070, Paper No. 21 (Apr. 18, 2014) at 23-24. As a result, the Board found the petitioner's showing of public availability to be insufficient. *Id*. Petitioner has similarly not met its burden with respect to Hsieh or AppliCad, and the Board should decline to institute trial on all Grounds that rely on them.

ii. Hsieh

Petitioner identifies the Hsieh reference, a research paper purportedly deposited at the University Libraries of Carnegie Mellon University (Ex. 1003) as prior art and uses the date of "November 1995" in its citations thereof. *See* Pet. at List of Exhibits. But Petitioner has not made a facial showing that this Hsieh

reference was publicly available at any time before the priority date of the '152 patent. *See* Pet. at 4-5.

First, there is no evidence that Hsieh was indexed or otherwise made accessible to the public, as required. *See SRI Int'l*, 511 F.3d at 1194; *see also In re Lister*, 583 F.3d 1307, 1317 (Fed. Cir. 2009) (declining to find public availability based only on "pure speculation" about the practices of the document's custodian). The Federal Circuit has consistently rejected the public availability and accessibility of materials in university libraries without evidence of indexing or cataloguing that would provide a way for interested members of the public to locate the reference. *See In re Cronyn*, 890 F.2d at 1161 (thesis not catalogued or indexed by subject matter, only by author's name); *In re Bayer*, 568 F.2d 1357, 1362 (C.C.P.A. 1978) (thesis uncatalogued and unshelved as of priority date). Petitioner provides no support that Hsieh was indexed or cataloged such that interested members of the public could find it, or any other similar information establishing that it was publicly available as of the priority date of the '152 patent, *i.e.*, October 31, 2008.

The Board has previously resolved an analogous petition by declining to institute trial. In *Symantec*, Petitioner did not provide evidence "tending to show when the [Cardinale] thesis actually may have been released or distributed to the public." *Symantec*, IPR2015-00371, Paper No. 13, at 8. Even though the thesis in

question included "an Abstract and a list of subject terms," the Board found that Petitioner failed to meet its burden because it pointed to no evidence that the thesis was entered into an electronic database prior to the priority date, "much less into a publicly accessible database prior to the critical date." *Id.* at 8-9. Here, the Petition does not make even a preliminary showing that Hsieh was physically available to the public, that Hsieh was shelved in a manner that it could be located by members of the public, or that Hsieh was indexed such that interested members of the public could find it through the exercise of reasonable diligence.

Second, while the date on Hsieh's cover page – November 1995 – may indicate the date of its creation, it is insufficient on its own to establish public accessibility – additional evidence confirming that Hsieh was actually available and accessible on that date is required. *See SRI Int'l*, 511 F.3d at 1197; *In re Bayer*, 568 F.2d at 1362; *Qualcomm v. ParkerVision*, IPR2015-01825, Paper No. 8 (PTAB Mar. 8, 2016) at 19-20 (denying institution where there was no evidence of the normal practices of the library when receiving books); *Symantec*, IPR2015-00371, Paper No. 13, at 8-9 (denying institution where no evidence when the reference was indexed or entered into an electronic library database). Moreover, the "November 1995" date is unsubstantiated hearsay. *See ServiceNow, Inc. v. Hewlett-Packard Co.*, IPR2015-00707, Paper No. 14 (Nov. 2, 2015) at 9-10; *Apple, Inc.*, IPR2015-00369, Paper No. 14, at 6.

Accordingly, the Board should decline to institute trial on Grounds 1, 2, 3, and 4, which rely exclusively on Hsieh for numerous claim elements.

iii. AppliCad

The Board should additionally decline to institute trial on Grounds 3 and 7 because Petitioner likewise failed to meet its burden to demonstrate AppliCad is prior art. While Petitioner identifies the AppliCad reference as prior art and accords it a date of "November 2002," Petitioner has not made a sufficient showing that AppliCad was publicly accessible as of the priority date of the '152 patent, *i.e.*, October 31, 2008. Petitioner's "corrected" AppliCad reference (Corrected Ex. 1005) includes an affidavit which attests to the date when the document was available at a particular "website address," on June 18, 2005. Ex. 1005 at 48, 51.

Mere publication on the Internet, however, is ***insufficient*** to establish public availability. *SRI Int'l*, 511 F.3d at 1197. In *Blue Calypso LLC v. Groupon, Inc.*, the Federal Circuit found that without evidence of how an "interested party could navigate" to the reference at issue, the Board correctly rejected invalidity grounds based on that reference. *See* 815 F.3d 1331, 1350 (Fed. Cir. 2016).

The Board similarly declined to institute trial in *EFF v. PersonalAudio*. While the reference at issue there was potentially available through a URL, this was not sufficient evidence of "public availability" because there had been no

showing that the URL was "disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence can locate it." *See* IPR2014-00070, Paper No. 21, at 22.

Here, Petitioner's affidavit merely identifies a URL for the AppliCad reference. Nowhere does the affidavit address whether this URL was made available to interested persons of ordinary skill in the art. *See SRI Int'l*, 511 F.3d at 1194-95*; EFF*, IPR2014-00070, Paper No. 21, at 23-24. As confirmed by numerous authorities, the affidavit does not make a preliminary showing that the AppliCad reference was publicly available as of the priority date of the '152 patent. *See Blue Calypso*, 815 F.3d at 1350; *SRI Int'l*, 511 F.3d at 1197; *EFF*, IPR2014-00070, Paper No. 21, at 23-24. Accordingly, the Board should decline to institute trial on Grounds 3 and 7, which exclusively rely on AppliCad for claim limitations.

B. Petitioner Articulates No Reasonable Rationale For Combining The References For Any Of The Six Obviousness Grounds

i. Legal Standard For Combining References In Obviousness Combinations

For the combinations in each of its six obviousness grounds, Petitioner has "failed to sufficiently show that a skilled artisan would have had a reason to combine the teachings of [the cited references] to achieve the claimed invention"

of the '152 patent, and the Board should not institute trial for this additional reason as well. *See Purdue Pharma L.P. v. Depomed, Inc.*, No. 2015-2029, 2016 WL 1161229, at *6 (Fed. Cir. Mar. 24, 2016) (affirming Board's final written decision that petitioner failed to prove challenged claims unpatentable as obvious over the cited prior art).

"Obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination." *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011) (citing *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)). It is "important to identify ***a reason*** that would have prompted a person of ordinary skill in the relevant field to combine the elements ***in the way*** the claimed new invention does." *Purdue*, 2016 WL 1161229, at *5 (quoting *KSR*, 550 U.S. at 418) (emphasis in original). A patent challenger must demonstrate both "that a skilled artisan would have been motivated 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 in doing so." *Intelligent Bio-Sys. Inc.*, 2016 WL 2620512, at *6 (internal quotation marks and citation omitted); *see also Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1379 (Fed. Cir. 2012).

Petitioner has fallen far short of making these required showings here, and the Board routinely declines to institute trial in these circumstances. *See, e.g.*,

Funai Elec. Co. v. Gold Charm Ltd., IPR2015-01448, Paper No. 13 (Jan. 11, 2016) at 17 (declining to institute on obviousness grounds where Petitioner failed to establish motivation to combine); *Stryker Corp. v. Karl Storz Endoscopy-Am., Inc.*, IPR2015-00672, Paper No. 9 (Sept. 1, 2015) (same); *Smart Modular Techs., Inc. v. Netlist, Inc.*, IPR2014-01373, Paper No. 16 (Mar. 13, 2015) (same).

ii. Petitioner Improperly Relies On "Mere Conclusory Statements" And Hindsight As Its Alleged Basis For Combining The References In Grounds 2-4 and 6-8

(a) Petitioner Fails to Demonstrate It Would Have Been Obvious To Combine Hsieh With Perlant (Ground 2)

Petitioner's proposed analysis in support of the combination of Hsieh and Perlant (Ground 2) should be rejected. Specifically, Petitioner contends that "[a] person of ordinary skill in the art would have combined the scene registration process in Perlant with the three-dimension roof generation of Hsieh," and that "Perlant discloses the ability to augment 3D model generation by scene registration in aerial images." *See* Pet. at 24. But that is incorrect – the alleged registration process in Perlant has nothing to do with the generation of roof models. As discussed in more detail below in Section VI.D *infra*, Perlant's discussion of "registration" concerns the generation of "disparity maps" which show the relative heights between buildings in the images – ***not*** a three-dimensional model of any

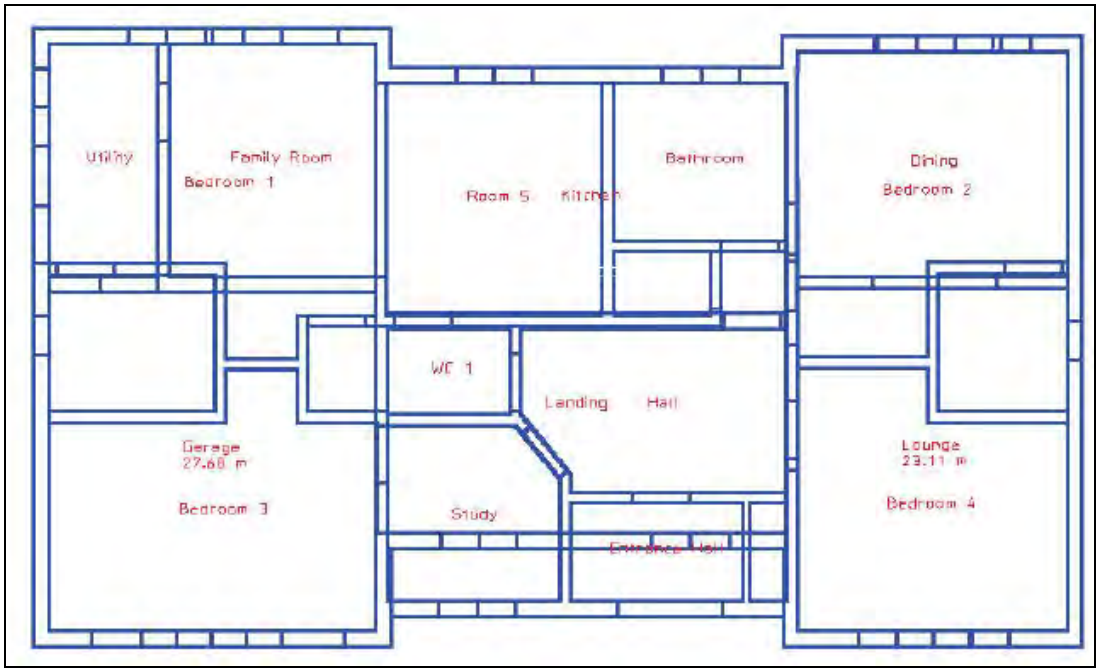
particular roof. *See* Perlant at 490-492. Contrary to Petitioner' assertions, Perlant's references to "three-dimensional visualizations" and "three dimensional images" are not enough. Perlant never once uses its registration process to provide a roof model, let alone a three-dimensional one. There would be no reason to combine Perlant's scene registration feature with Hsieh, because Perlant does not use it to construct three-dimensional models, *i.e.* the references are directed to very different purposes. One of ordinary skill would thus have no expectation of successfully combining Hsieh and Perlant and Petitioner's omission of any reasoning behind its proposed combination is a critical failure that supports denial of institution. *InTouch Techs., Inc. v. VGO Commc'ns., Inc.*, 751 F.3d 1327, 1352 (Fed. Cir. 2014) ("A reason for combining disparate prior art references is a critical component of an obviousness analysis; 'this analysis should be made explicit.'"); *KSR*, 550 U.S. at 418 (requiring "articulated reasoning with some rational underpinning" to make the asserted combinations).

(b) Petitioner Fails to Demonstrate It Would Have Been Obvious To Combine Hsieh With AppliCad (Ground 3)

Petitioner has not articulated a reasonable rationale for combining Hsieh and AppliCad to achieve any of the claimed inventions with "a reasonable expectation of success." *Purdue*, 2016 WL 1161229, at *5. Moreover, an actual evaluation of

the references themselves confirms that Petitioner's conclusory statements are incorrect.

Petitioner contends that "Applicad discloses the ability to import roof models from other systems" and thus "a person of ordinary skill in the art would have combined the roof reporting functionality of Applicad with the three-dimensional roof generation of Hsieh." *See, e.g.*, Pet. at 29. These conclusory statements, however, are incorrect. Specifically, AppliCad ***does not*** allow for the importation of three-dimensional roof models from other systems, but instead only provides for the importation of ***two-dimensional*** "roof or building outlines," like the one illustrated below:



See AppliCad at 4. According to AppliCad, two-dimensional outlines can be saved in "the .dxf format (drawing exchange format)" and imported into the system. *See id.* After the two-dimensional outline is imported, AppliCad relies on ***a user*** to create a three-dimensional model via the "Digitise Outline" command. *See id.* Using that command, the user manually enters roof measurement information, *e.g.* "the pitch or slope of the roof and the eave offset from the wall[s]." *Id.* Although AppliCad states that then "the roof [model] is generated automatically" (*id.*), the slope and eave offsets – *i.e.,* the information that allegedly converts the two-dimensional model into a three-dimensional model – ***must*** be entered manually, and there is no ability to ***import*** a three dimensional model as Petitioner asserts must occur as the basis for its proposed motivation to combine. *See id.* at 4; *see also* Pet. at 29.

The user also has the option to scan in the printed two-dimensional roof outlines, rather than importing them from a .dxf file (*see* AppliCad at 6) but this option likewise does not involve importing a three-dimensional model and a user must "enter the true measurement[s]" before such a model is formed. *Id.* Thus, Petitioner's assertion that "[a] person of ordinary skill in the art would have combined the roof reporting functionality of Applicad with the three-dimensional roof generation of Hsieh" (Pet. at 29) is incorrect – to the contrary, AppliCad is

incompatible with Hsieh's three-dimensional images, unless they are manually created within AppliCad.

Moreover, although Petitioner's motivation to combine is based on an assumption that Hsieh outputs a three-dimensional roof model in a manner that could be used by AppliCad, there is nothing in Hsieh to suggest the SiteCity system described therein, which was a research tool at the Digital Mapping Laboratory at Carnegie Mellon University, is capable of generating such output for other systems to use. *See* Hsieh at 1-2. Indeed, there is no disclosure in Hsieh of outputting models, let alone a model in the ".dxf format" required by the AppliCad system. *See* AppliCad at 4. This is a significant deficiency: the "three-dimensional model" requirement of the claims is one of the key aspects of the invention (*see* '152 patent at claims 1, 12, 16), and Petitioner's inability to identify compatible references on this issue highlights the non-obviousness of the claims. As with the other combinations, Petitioner's omission of reasoning behind its proposed combination is a critical failure and supports denial of institution. *Purdue*, 2016 WL 1161229, at *5; *KSR*, 550 U.S. at 418-19; *Wowza Media*, IPR2013-00054, Paper No. 12, at 15.

The Board's decision in *Smart Modular Techs.* is instructive. There, the petitioner contended a person of skill in the art would have been motivated to combine a prior art patent and a standards document (JTAG) because the patent

disclosed compliance with that standard. IPR2014-01373, Paper No. 16, at 10. The Board, referring to the specific configurations of JTAG in the claimed inventions of the challenged '434 patent, rejected that argument and denied institution. *Id*. at 11. Here, Petitioner has not even identified evidence that Hsieh and AppliCad are compatible, much less "explain[ed] why one of ordinary skill in the art would know" to combine Hsieh and AppliCad to achieve any of the claimed inventions here with "a reasonable expectation of success." *Purdue*, 2016 WL 1161229, at *5.

At best, Petitioner's proposed combination is based on impermissible hindsight. *See id*. at *6. Neither Hsieh nor AppliCad recognizes a problem that would have motivated a person of ordinary skill in the art to modify the references in the manner proposed by the petition. Hsieh does not suggest using a roof estimate report, let alone the specific reports set forth in the claims. Likewise, the portions of AppliCad cited by Petitioner concern the importation of ***two-dimensional*** outlines (*see* Pet. 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. Thus, using the alleged combination of Hsieh with 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). Indeed, one of the inventive aspects of the '152

patent is its use of three-dimensional models generated from aerial images in connection with roof reports. '152 patent at claims 1, 12, 16. Petitioner cannot simply recreate that aspect of the invention by combining an alleged aerial image reference (Hsieh) with a roof report reference (AppliCad), when neither reference includes any suggestion that such an inventive combination would be advisable. *InTouch Techs.*, 751 F.3d at 1351 (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.")

(c) Petitioner Fails to Demonstrate It Would Have Been Obvious To Combine Hsieh With Aerowest (Ground 4)

Petitioner's argument for combining the "network accessibility" functionality of Aerowest with Hsieh (Ground 4) fares no better. *See* Pet. at 35-37 ("[a] person of ordinary skill in the art would have found it obvious to incorporate the network accessibility of Aerowest with the three-dimensional modeling of Hsieh. … Aerowest improves the system of Hsieh by providing additional network accessibility functionality."). But such conclusory statements regarding motivation to combine are routinely rejected by the Board. *Purdue*, 2016 WL 1161229, at *5; *KSR*, 550 U.S. at 418-19; *Wowza Media*, IPR2013-00054, Paper No. 12, at 15.

Moreover, the substance of the references themselves confirms that their combination would not have been obvious. As explained immediately above, Hsieh does not show any way of outputting three-dimensional models. *See* Section VI.B.ii. Therefore, the combination of Hsieh with Aerowest does not result in the claimed invention, and one of ordinary skill in the art would not be motivated to combine them.

(d) Petitioner Fails to Demonstrate It Would Have Been Obvious To Combine Avrahami With Perlant (Ground 6)

Petitioner's "argument" in support of combining Avrahami with Perlant is a cross-reference to its discussion of Ground 2 (combining Perlant with Hsieh). But Petitioner's justification for combining Perlant with Hsieh is insufficient, as those references are incompatible. *See* Section VI.B.ii(a) *supra*. Moreover, Petitioner's conclusory remark asking the Board to import its attempt to justify a ***different*** combination cannot support its combination here. Indeed, a petition for *inter partes* review must contain "[a] ***full*** statement of the reasons for the relief requested, including a detailed explanation of the significance of the evidence," and must identify specifically "[h]ow the construed claim is unpatentable," *TRW Automotive US LLC v. Magna Elecs. Inc.*, IPR2014-00294, Paper No. 21 (Aug. 27, 2014) at 4; *see also Corning Inc. v. DSM IP Assets B.V.*, IPR2013-00049, Paper

No. 8 (May 9, 2014) at 14 ("The Board will not scour the record in search of evidence relevant to a particular issue, nor will it attempt to fit evidence together into a coherent explanation that supports an argument.").

(e) Petitioner Fails to Demonstrate It Would Have Been Obvious To Combine Avrahami With AppliCad (Ground 7)

Petitioner fails to support its combination of Avrahami with AppliCad (Ground 7). Similar to Ground 6, Petitioner's argument improperly attempts to rely on "the same reasons as one would combine Hsieh with Applicad" as a substitute for providing any specific analysis or rationale. *See* Pet. at 53. Such a conclusory approach is improper and should be rejected. *Purdue*, 2016 WL 1161229, at *5; *KSR*, 550 U.S. at 418-19; *Wowza Media*, IPR2013-00054, Paper No. 12, at 15.

Moreover, as with Petitioner's combination of Hsieh and AppliCad, Avrahami and AppliCad are incompatible. AppliCad does not allow for the importation of a three-dimensional model, and thus could not be used with Avrahami as alleged. *See* Section VI.B.ii(b) *supra*. Moreover, as with Hsieh, there is nothing in Avrahami suggesting it is capable of outputting a three-dimensional model for other systems to use. *See* Avrahami at 43-44. To the contrary, Avrahami suggests that its algorithm would require "modification" in

order to even store its data as a three-dimensional model, because "[t]he proposed algorithm focuses more on the extraction of spatial data than on the storage method." *See id.* at 43.

At bottom, Petitioner's omission of reasoning behind its proposed combination is a critical failure and supports denial of institution. *Purdue*, 2016 WL 1161229, at *5; *KSR*, 550 U.S. at 418-19; *Wowza Media*, IPR2013-00054, Paper No. 12, at 15.

(f) Petitioner Fails to Demonstrate It Would Have Been Obvious To Combine Avrahami With Aerowest (Ground 8)

Petitioner's argument in support of combining Avrahami with Aerowest again merely points to a Hsieh combination in place of any actual analysis. For the same reasons as in Section VI.B.ii, Petitioner's failure to provide any rationale for combining these references renders Ground 8 legally insufficient and accordingly it should be rejected.

(g) Hsieh Teaches Away From The Invention And The Proposed Combinations (Grounds 2-4)

As an additional basis to reject Petitioner's proposed combinations involving Hsieh, Hsieh explicitly teaches away from implementing the claimed invention, which provides an independent ground to decline institution. As discussed in

Section II *supra*, all of the challenged claims of the '152 patent require the use of ***at least two*** aerial images to generate a roof estimate report. In its combinations involving Hsieh (Grounds 2-4), Petitioner relies on Hsieh as allegedly supplying this disclosure of multiple images (*see* Pet. at 24-26, 30-31, 35), but Hsieh teaches away from utilizing multiple images.

Specifically, Hsieh discusses three methods that may be used to generate three-dimensional building "hypotheses," which Petitioner relies on to meet the building modelling requirement of the claims. *See, e.g.*, Pet. at 11-16, 24-26, 30-31, 35. Only one of these approaches, however, uses multiple images to generate a "hypothesis," and Hsieh explicitly deters readers from using that approach due to its drawbacks. *See* Hsieh at 19-20. In particular, the first method is called "Single Image Building Detection (SIBD)" which "generates and verifies [3D] building hypotheses using a single image." *Id*. The second method is "External Building Verification (EBV)," which also "generates [3D] building hypotheses using a single image," although it later uses other images to verify the single image. *Id*. Although the third method – named "Multi-Image Roof Matching (MIRM)" – "generates and verifies [3D] building hypotheses using multiple images" (*id.*), Hsieh explicitly instructs those of skill in the art ***not*** to use that method or any

method other than Single Image Building Detection (SIBD), because the other methods are more complex due to the combinatorics[2] involved:

> [O]ur experiments show that both MIRM and EBV are currently slow due to combinatorics, and for reasons of speed, ***only SIBD is currently used within SiteCity***.

Hsieh at 21.

This is a clear case of "teaching away," negating Petitioner's attempt to combine these references. As both the Federal Circuit and the Board have consistently confirmed, a reference teaches away from a claimed invention when a person of ordinary skill, "upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *See, e.g.*, *Allergan, Inc. v. Sandoz Inc.*, 796 F.3d 1293, 1305 (Fed. Cir. 2015); *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999) (same); *BMC Medical Co. Ltd. v. ResMed Ltd.*, IPR2013-01363, Paper No. 25 (Jan. 20, 2016) at 19 (same). Here, even if the

[2] Combinatorics is the branch of mathematics studying the enumeration, combination, and permutation of sets of elements and the mathematical relations that characterize their properties. *See* Ex. 2001 (Weisstein, Eric W. "Combinatorics." From MathWorld - A Wolfram Web Resource. http://mathworld.wolfram.com/Combinatorics.html).

Board finds that there is disclosure in Hsieh of using multiple images to generate a three-dimensional roof model, and that one of skill in the art would be motivated to combine Hsieh with AppliCad, Perlant, or Aerowest, Hsieh's teaching away from use of multiple images would invariably cause one of skill in the art to use the single-image approach in combining Hsieh with those other references, ***not*** the multi-image approach. Indeed, Hsieh performed experiments on the single and multi-image approaches and explicitly concludes that using any approach other than single-image would be slow and inefficient. *See* Hsieh at 21. As such, one of ordinary skill in the art is instructed to not even try that approach, as it has already been vetted by Hsieh and rejected. *See, e.g.*, *Allergan, Inc.*, 796 F.3d at 1305; *Dr. Reddy's Labs., Inc. v. Pozen Inc.*, IPR2015–00802, Paper No. 28 (Oct. 9, 2015) at 25-26.

(h) Petitioner's Conclusory Expert Testimony Should Be Rejected

Petitioner's reliance on the declaration of Harold Schuch adds nothing to Petitioner's conclusory motivation to combine arguments. Schuch "essentially repeats the arguments advanced by Petitioner in its Petition" (*compare* Pet. at 29 *with* Ex. 1007 ¶¶ 55-58) and as such, offers no persuasive evidence supporting the combination. *See Qualcomm Inc. v. ParkerVision,* IPR2015-01819, Paper No. 8 (Mar. 8, 2016) at 29 (finding expert testimony that "essentially repeats the

arguments advanced by [Petitioner]" unpersuasive). As in *Qualcomm*, the Board should disregard Schuch's declaration here. *See id*.

(i) Petitioner's Boilerplate Assertions Regarding Motivation To Combine Also Should Be Rejected

In addition to its generalized, conclusory statements concerning combinations discussed above, Petitioner also makes a number of boilerplate assertions listing MPEP sections after its claim charts which Petitioner contends support the proposed combination. *See* Pet. at 26-28, 31-33, and 35-37. Almost without exception, these arguments are not supported by any citation to the references themselves, or expert testimony, and in each case merely repeat the same conclusory grounds discussed above without providing any additional rationale for combining the references. These arguments should be rejected.

As this Board has consistently found, boilerplate assertions such as these that lack evidence or explanation are insufficient to establish obviousness. For example, in *Stryker v. Karl Storz Endoscopy*, IPR2015-00672, Paper No. 9, at 13, the Board rejected an unsupported and unexplained claim that "the combination of Endsley and Adler for use in an endoscope would have involved merely combining known elements according to known methods to yield predictable results or the simple substitution of one known element for another to obtain predictable results," because the petitioner did not explain why "one of ordinary skill in the art

relating to endoscopic cameras would look to a camera such as Endsley, which is suitable for videoconferencing."

Petitioner's arguments here suffer from the same fatal defect. Specifically, Petitioner's additional paragraphs following its claim charts merely state, without analysis, that the references could be combined, including by using "known techniques." *See, e.g.*, Pet. at 27 ("person of ordinary skill in the art would have found it obvious to incorporate the registration functionality of Perlant into the three-dimensional modeling of Hsieh as doing so would be using known techniques to improve similar devices in the same way."); *id*. at 32, 37. That Petitioner's assertions incorporate legal standards verbatim from the MPEP is irrelevant, and is certainly no substitute for the explicit "reasoning" based on the facts, as required by the cases. *Stryker*, IPR2015-00672, Paper No. 9, at 7.

As another example, Petitioner regularly refers to "predictable results" as a basis for its alleged obviousness combination. *See, e.g.*, Pet. at 26-27 ("a person of ordinary skill in the art would have found it obvious to incorporate the registration functionality of Perlant with the three-dimensional modeling of Hsieh as doing so would be combining prior art elements according to known methods to yield predictable results."); *id*. at 31 (same argument for AppliCad and Hsieh); *id*. at 36 (same argument for Aerowest and Hsieh). Once again, Petitioner merely parrots the standards from the MPEP.

The Petition fails to make the required showing to support a finding of obviousness. Indeed, "[a]lthough predictability is a touchstone of obviousness, the 'predictable result' discussed in *KSR* refers not only to the expectation that prior art elements are capable of being physically combined, but also that the combination would have worked for its intended purpose." *DePuy Spine, Inc. v. Medtronic Sofamor Danek*, Inc., 567 F.3d 1314, 1326 (Fed. Cir. 2009) (citing *KSR*, 550 U.S. at 398). And as the Board held in *Stryker*, this argument fails where, as here, the "Petitioner has not explained sufficiently why, or identified evidence that shows, the invention described in the [challenged patent] falls into a very predictable field, or that one of ordinary skill in the art would have possessed the requisite skills to make the proposed combination, or that one of ordinary skill in the art would have anticipated reasonably the combination to function in an ordinary and expected way." *Stryker*, IPR2015-00672, Paper No. 9, at 14 (citing *Rothman v. Target Corp.*, 556 F.3d 1310, 1319-20 (Fed. Cir. 2009) and *Unigene Labs.*, 655 F.3d at 1360).

C. Ground 1: Hsieh Does Not Anticipate Any Of The Challenged Claims

i. Hsieh Does Not Disclose "generat[ing] a roof estimate report" (Claims 1, 12, 16, 25)

Petitioner treats the preambles of independent claims 1, 12, and 16 as limitations, and identifies general statements regarding "three dimensional building models" of Hsieh as purportedly meeting the "generat[ing] a roof estimate report" aspects thereof, as well as the similar limitation of claim 25. *See* Pet. at 11-12, 18, 21, 23. But as detailed in Section III.B.ii above, the claimed "roof estimate report" is separate and distinct from the roof model. Hsieh does not disclose any reporting functionality, and indeed, Petitioner merely contends that "[t]he system of Hsieh generates a roof estimate report ***in the form of a model*** having measurements of a building roof." Pet. at 10. Petitioner's expert further confirms that in order for Hsieh to generate a roof estimate report, "one of ordinary skill in the art" would need "to modify the output of Hsieh," *i.e.*, there is no disclosure of a roof estimate report without modification. *See* Ex. 1007 at ¶ 47 (asserting that "it was well within the knowledge of one of ordinary skill in the art to generate a roof estimate report using the models generated by Hsieh" but failing to point to any disclosure of roof report generation in Hsieh). This is not anticipation. *See Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) ("[U]nless a reference

discloses within the four corners of the document not only all of the limitations claimed but also ***all of the limitations arranged or combined in the same way as recited in the claim***, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102.").

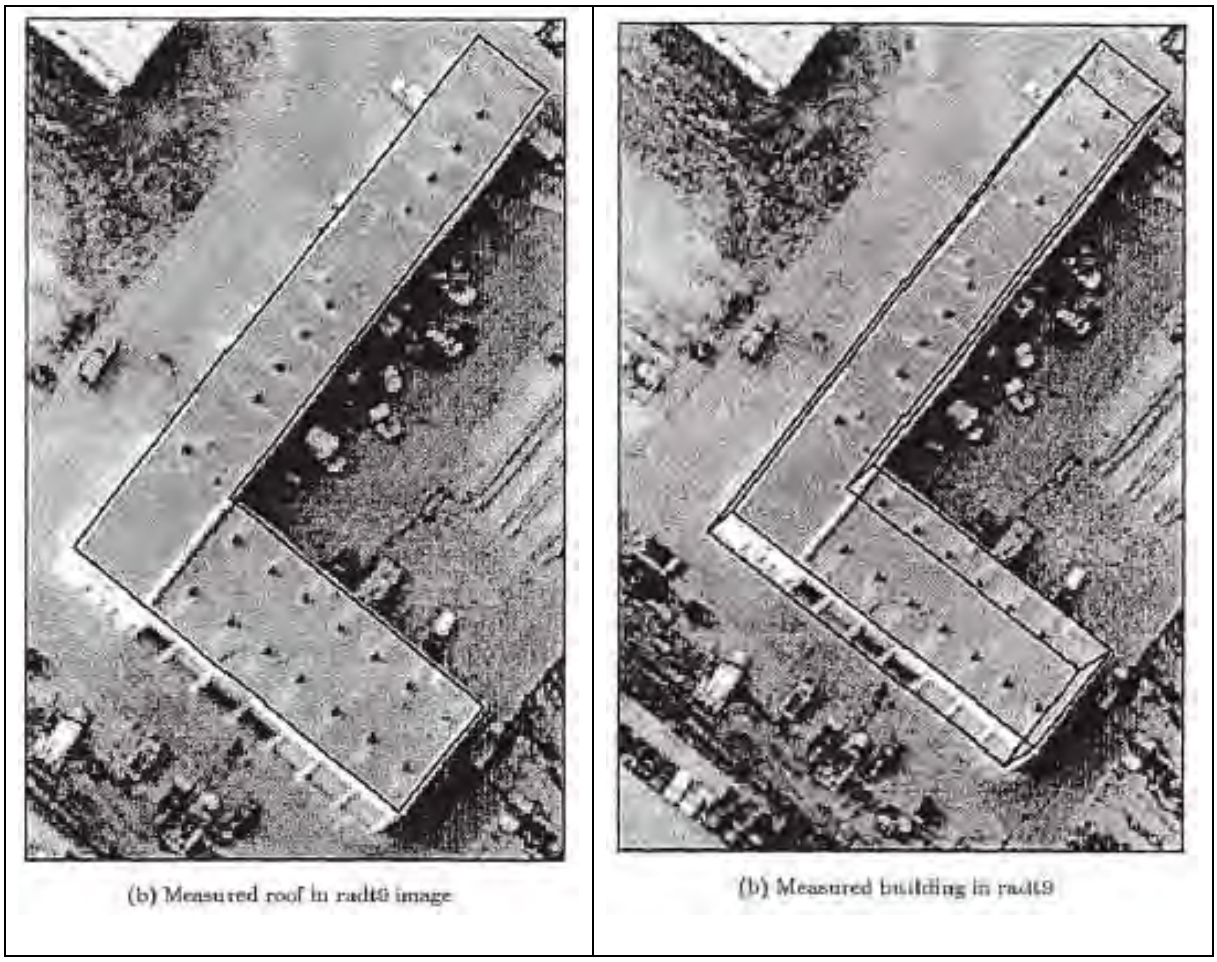
Notably, Petitioner does not argue that Hsieh discloses the generation of a roof estimate report in multiple parallel Petitions before the Board, for claims similarly requiring the generation of a "roof estimate report." *See, e.g.*, IPR2016-00586 at Paper No. 10; IPR2016-00587 at Paper No. 9. Because each challenged independent claim requires the generation of a "roof estimate report," and because Hsieh does not disclose this feature, all of Petitioner's anticipation arguments must be denied.

ii. Hsieh Does Not Disclose "display[ing] a projection of the feature from the modified three-dimensional model onto the first and second aerial images as a line drawing of the feature, each overlaid on corresponding locations of the feature on the first and second aerial images" (Claims 1 and 12) Or "in response to the receiving of the indication of the feature of the building, displaying a projection of the feature from the modified three-dimensional model onto a second aerial image that provides a second view of the roof of the building as a line drawing of the feature, each overlaid on corresponding locations of the feature on the first and second aerial images" (Claim 16)

Hsieh does not disclose these limitations, which appear in challenged independent claims 1, 12, and 16 respectively. Each of these claims is directed to "generat[ing] a roof estimate report" using two different aerial images of a roof, *i.e.*, the "first aerial image" and the "second aerial image." '152 patent at claims 1, 12, 16. A key aspect of the claims is allowing a user to change features on the first image which then causes the computer system to make corresponding changes in the second image. *See id.* This computer-driven change to the second image is captured in the above claim elements. *See id.* This is an important aspect of the patented roof estimation system: according to the specification, "the operator can switch between various images of the building roof 407, making refinements to the

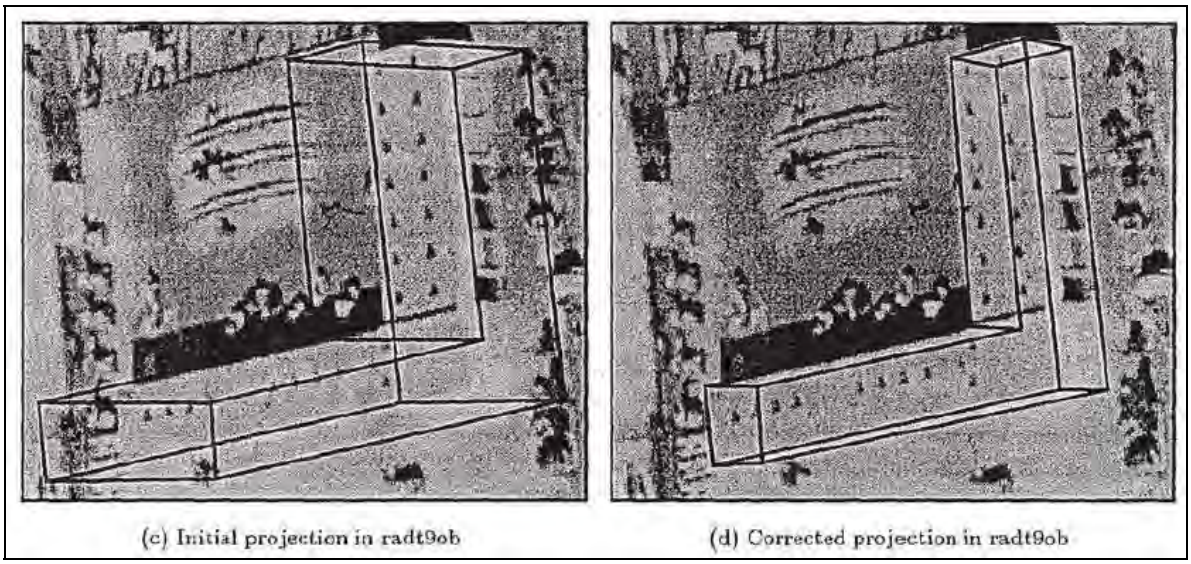
3D model by adjusting the wire frame in whichever image is more convenient and/or provides a more suitable perspective/view of the model." *See* '152 patent at 14:57-61. Hsieh, however, does not disclose this functionality; to the contrary, when features are identified in a first image in Hsieh, a user is responsible for manually identifying those features in corresponding locations in a second image. This is the opposite of the claimed functionality, and fails to provide one of the key benefits of the invention, as discussed in the specification. *See id.* at 14:57-61.

Specifically, Hsieh's algorithm for generating a 3D model from an image of a roof begins with a user "manually measur[ing] the roof and floor of a building in a first image. *See* Hsieh at 6 ("The first task … is to manually measure the roof of a building in an image. … [T]he next task is to measure the floor position.") These roof and floor measurements are illustrated with the black lines drawn over the images in Figs. 3(b) (roof lines) and 4(b) (floor lines and roof lines):



Hsieh at Figs. 3(b) and 4(b). After the roof and floor measurements are made in the first image, Hsieh does not describe a step where those measurements are "overlaid on ***corresponding locations of the feature*** on the … second aerial image[]." as required by the claims. *See, e.g.*, '152 patent at claim 16. Rather, as confirmed by Hsieh, a user must manually place the measurements on corresponding locations in the alleged second image, in a process referred to as "Correct Building Location In Other Images." *See, e.g.,* Hsieh at 7 ("When an object is projected from one image to the next, the projected buildings usually do

not agree with the image due to inaccuracies in the … camera parameters"); ("The final task is to correct the location of the building in other images."). This "correction" process is not an option – according to Hsieh, "[t]his step is essential for achieving accurate 3D building models." *Id.* This process is illustrated in the corresponding figures, which show how a user must manually align the measurements in the second image such that it is in the corresponding locations:



Hsieh at Figs. 4(c) and 4(d). Thus, the placement of the projection on the "corresponding locations" is not in response to the received indication of a feature on the first image as required but rather the result of a user-driven correction. With respect to claim 16, the user-driven correction is indisputably not "in response to the receiving of the indication of the feature ***[in the first aerial image]."*** *See* '152

patent at claim 16. Similarly, claims 1 and 12 require that the ***modified three-dimensional model*** – which is based on the received indication of a feature ***in the first image*** – be projected onto corresponding locations on the second image. The user-driven manual correction of ***the second image*** does not qualify, as it is not driven by a modification to the alleged model, let alone a modification to the first image.[3]

[3] Independent claims 1 and 12 require "display[ing] a projection of the feature from the modified three-dimensional model onto the first and second aerial images as a line drawing of the feature, each overlaid on corresponding locations of the feature on the first and second aerial images." *See* '152 patent at claims 1, 12. Like claim 16, both of these claims require "receiv[ing] an indication of a feature of the building shown ***in the first aerial image***." *See id*. In response, there is "modif[ication] [of] a three-dimensional model of the roof based on the received indication of the feature of the building." *See id*. Accordingly, like claim 16, claims 1 and 12 require that the claimed overlay on the second aerial image be driven by the modification to the three-dimensional model as a result of an indication of a feature on a first image. Hsieh does not disclose these claim elements.

None of Petitioner's citations to Hsieh describe a projection from one image to corresponding locations on another image, and indeed one does not exist because that functionality is expressly missing from Hsieh. *See* Pet. at 15-16 (citing Hsieh at 6, 10, 13, 29, Fig. 17). In reality, Hsieh strongly teaches away from such an automated approach, by proposing a "semi-automatic" approach that requires user intervention. *See, e.g.*, Hsieh at 1 (advocating a "semi-automatic" approach where "users correct mistakes in [the] site model."); *Allergan, Inc. v. Sandoz Inc.*, 796 F.3d 1293, 1305 (Fed. Cir. 2015) ("[a] reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant."); *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999) (same); *BMC Medical Co. Ltd. v. ResMed Ltd.*, IPR2013-01363, Paper No. 25 (Jan. 20, 2016) at 19 (same).

iii. Hsieh Does Not Disclose "transmitting roof measurement information based at least in part on the modified three-dimensional model" (Claims 9, 12)

According to the '152 patent, the patented system transmits roof measurement information to "third-party systems that generate roof estimate reports based on the provided information." *See* '152 patent at 17:24-33; 7:13-16

("[r]eports may be transmitted electronically, such as via a network (e.g., as an email, Web page, etc.) or by some shipping mechanism, such as the postal service, a courier service, etc.").

Hsieh does not disclose "transmitting" any roof measurement information out of the Hsieh system, let alone roof measurement information that is based on a modified three-dimensional model as required. Indeed, Hsieh provides ***no*** disclosure of outputting anything from the system – it simply creates the alleged model and the process is concluded. *See, e.g.* Hsieh at 1-2.

Faced with these facts, Petitioner suggests that in Hsieh, roof measurement information is transmitted "within the various components of the system" (Pet. at 17) and references generalized discussions from Hsieh to support this claim. Petitioner's contention on this point is insufficient for at least two reasons. First, merely transmitting roof measurement information "within the various components of the system" does not satisfy the claimed "transmitting" requirement. As discussed above, the claimed "transmitting" elements require transmission of roof measurement information ***out*** of the system, not within. *See* '152 patent at 17:24-33; 7:13-16.

Petitioner does not dispute these facts. And while transmitting measurements "within" the system is therefore irrelevant, Petitioner's citations to Hsieh on that point do not show that type of "transmitting" either. The first

parenthetical on page 17 (beginning with "Three-dimensional building hypotheses are generated by triangulating building hypotheses …") comes from page 20 of Hsieh, under the heading "Multi-Image Roof Matching (MIRM)." This passage, however, says nothing about the transmission of roof information, let alone information based at least in part on a modified model, as required. Moreover, Hsieh expressly teaches away from using the techniques described in that section, stating that "MIRM and EBV are currently slow due to combinatorics, and for reasons of speed, only [Single Image Building Detection] is currently used within SiteCity." Hsieh at 21. Likewise, the second parenthetical on page 17 of the petition (from page 71 of Hsieh) pertains to a general discussion of "integrate image understanding algorithms into an interactive system for extracting three dimensional building models using multiple images." Pet. at 17. Transmission of roof measurement information is simply not discussed.[4]

[4] Petitioner's citation includes a generic cite to 10 pages of Hsieh, *see* Pet. at 17 (citing "Hsieh, pp. 19-28") but only excerpts one parenthetical from this long span of pages. In any event, those pages likewise do not disclose the "transmission of roof information based at least in part on the modified model." Moreover, as Petitioner did not point the board to any particular disclosure on

Lastly, claims 9 and 12 require the transmitted roof measurement information to be "based at least on the ***modified*** three-dimensional model." Petitioner does not explain how this portion of the claim is met and indeed, it cannot do so, as discussed above. At bottom, Petitioner does little more than quote unrelated passages from Hsieh in its claim chart and accordingly its argument here should be rejected. *See TRW Auto.*, IPR2014-00294, Paper No. 21, at 4; *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992).

iv. Hsieh Does Not Disclose "displaying a marker operable to specify a point on an image; receiving, via the marker, an indication of a point on the first aerial image; and registering, based on the received indication of the point, the aerial image to a reference grid corresponding to the three-dimensional model" (Claim 10)

Petitioner relies on, without any further explanation, Hsieh's disclosure of "epipolar matching of the roof on other images and generat[ing] a set of roof hypotheses in each of the images" and "triangulating building hypotheses" in order to satisfy claim 10. *See* Pet. at 18 (citing Hsieh at 20). But claim 10 recites a specific set of steps by which an aerial image can be registered to a reference grid,

---

those pages, they should be disregarded. *Corning Inc.*, IPR2013-00049, Paper No. 8, at 14.

described in detail in the specification (*see generally* '152 patent at 9:27-12:15), and none of Petitioner's relied upon support comes close to meeting this claim.

Those steps require a registration marker, and certain actions the user takes based on that marker to register the images to a reference grid. Petitioner fails to identify any of these specifically claimed steps and items in Hsieh. First, Petitioner fails to identify a "marker operable to specify a point on the image." *See* Pet. at 18. Because Petitioner has not identified such a marker in Hsieh, the steps of "receiving, via the marker, an indication of a point," and "registering, based on the received indication of the point," cannot be met. *See id*. Moreover, Petitioner does not explain how its cited support discloses "registering, based on the received indication of the point, the aerial image to a reference grid corresponding to the three-dimensional model," nor can Petitioner identify the claimed "reference grid," let alone mention a "data structure to which one or more images are registered," to use Petitioner's own proposed claim construction. *Id*. Indeed, Petitioner does little more than quote unrelated passages from Hsieh in its claim chart, which are irrelevant to the claim requirements, and accordingly its argument here should be rejected. *See TRW Auto.*, IPR2014-00294, Paper No. 21, at 4; *In re Fritch*, 972 F.2d at 1266.

v. Hsieh Does Not Disclose "the roof estimation module is part of a network accessible roof modeling program executing on the computer system" (Claim 15)

Petitioner's support for this element consists of several references to images that are "distributed under the RADIUS program," but points to no evidence that those images, or the RADIUS program itself, were used in Hsieh as part of a "network accessible roof modeling program." *See* Pet. at 10-12, 20-21 (citing Hsieh at 31 ("This scene is part of the Ford Hood aerial images **distributed** under the RADIUS program) (emphasis added by Petitioner), 53 ("Figure 33(a) shows the image jl for the model board scene, distributed under the RADIUS program"), 57 ("Figure 33(c) shows the image 740v for a complex building in the Martin Marietta image set (mmbld), also distributed under the RADIUS program.")). The mere usage of the word "distributed" does not establish that the images Petitioner relies on are are part of the claimed "network accessible roof modeling program." At most, Petitioner's citations provide a reference to where images were previously obtained from for use with Hsieh. This does not establish any sort of network accessibility. Petitioner further relies on its expert, Dr. Schuch, for the proposition that the RADIUS program "was a central aerial image database," but the only support Dr. Schuch provides for that statement is the Hsieh reference itself. *See* Pet. at 11 (citing Ex. 1007 at ¶ 49 ("Hsieh obtains its aerial images from a

RADIUS program which was a central aerial image database. *See, e.g.*, Hsieh, p. 31.")). The "Fort Hood aerial images" Hsieh uses for its examples appear to be just one small subset of images from the RADIUS program, but neither Hsieh nor Petitioner provide any indication or support that they were accessed through a network accessible roof modeling program. And neither Petitioner nor Petitioner's expert, Dr. Schuch, actually connects any disclosure from Hsieh to the claim requirement that there be a "network accessible roof modeling program," rendering Petitioner's support inapposite. At bottom, Hsieh lacks any disclosure of network accessibility, and therefore it cannot anticipate this claim.

D. Ground 2: The Combination Of Hsieh And Perlant Does Not Render Claim 10 Obvious

Contrary to Petitioner's assertions, neither Hsieh nor Perlant discloses what is claimed in claim 10. As an initial matter, the combination of Hsieh and Perlant does not render obvious claim 1 from which this claim depends (*see* Sections VI.C.i-ii *supra*), and accordingly, the combination cannot render obvious this claim. *See In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988) ("Dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious."). As discussed in Sections VI.C.i-ii, Hsieh does not disclose numerous elements of claim 1, and Petitioner does not contend that Perlant meets any limitations of claim 1.

As discussed in Section VI.C.iv, Hsieh does not disclose "a reference grid corresponding to the three-dimensional model," as required by claim 10. *See* Section VI.C.iv *supra*. Attempting to remedy this deficiency, Petitioner argues that Perlant discloses this claim limitation. This is incorrect for at least two reasons.

First, while Perlant discusses scene registration, it does not disclose registering a first aerial image in connection with a ***three-dimensional model of a roof*** as is explicitly required by claim 10**.** To the contrary, Perlant's discussion of "registration" concerns the generation of "disparity maps" which show the relative heights between buildings in the images – ***not*** a three-dimensional model of any particular roof. For example, Figure 8(b) of Perlant is meant to provide a "disparity map" of relative height of buildings in an aerial image of Figure 8(a):

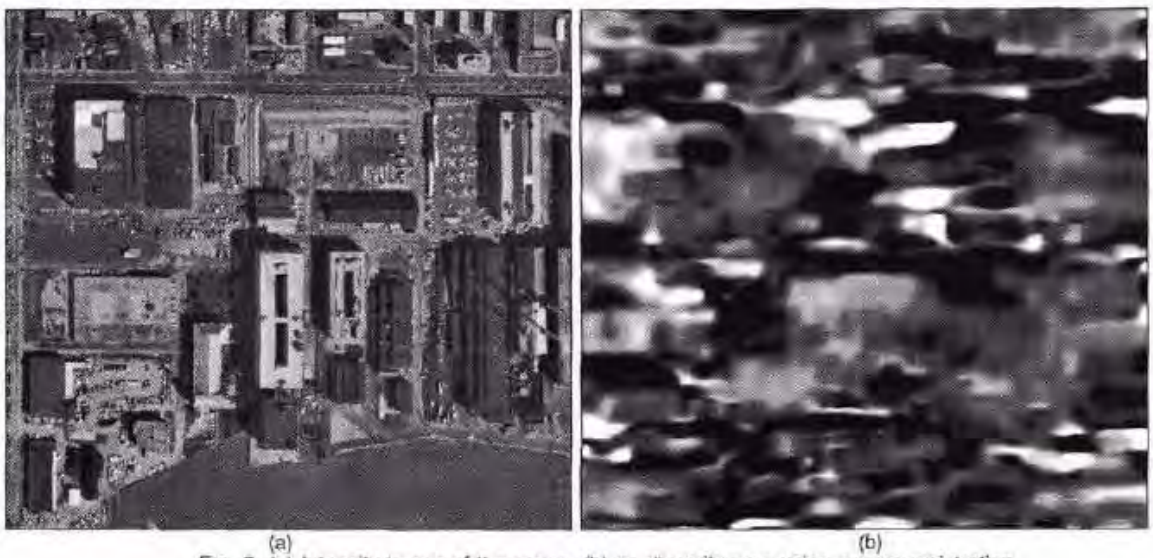
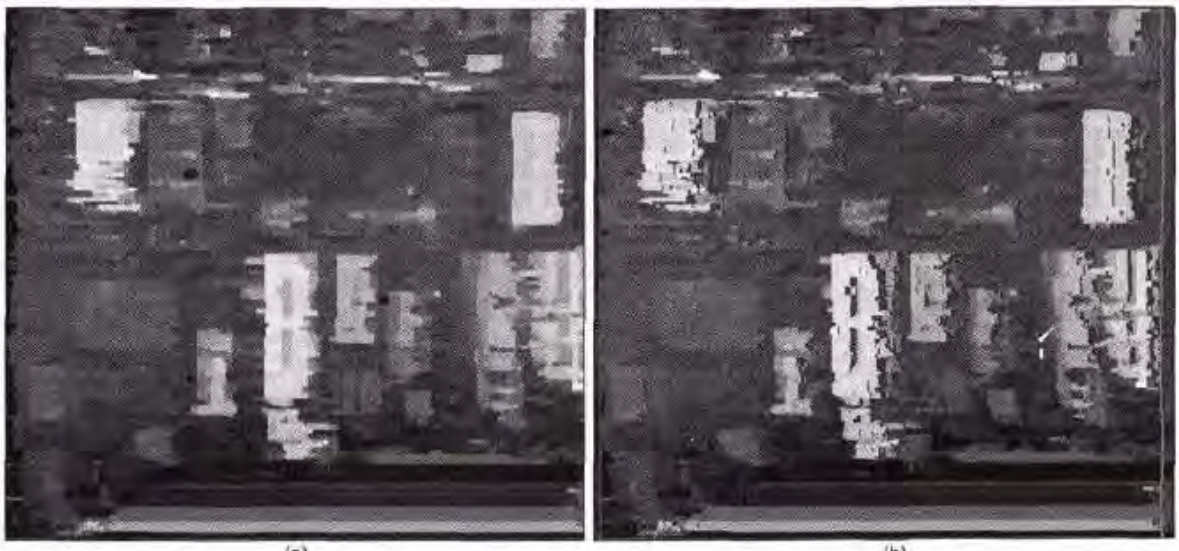


FIG. 8. (a) Intensity image of the scene. (b) S1 disparity map using coarse registration.

Figure 8(b) is described as three-dimensional because "brighter regions are closer to the camera and have greater height [while] [d]arker regions are at or below the relative terrain ground plane" (Perlant at 489), but Figure 8(b) does not provide a three-dimensional ***model of a roof*** as is required. '152 patent at claims 1 (reciting "modifying ***a three-dimensional model of the roof*** "); 10 ("registering, based on the received indication of the point, the aerial image to a reference grid corresponding to ***the three-dimensional model***"). Indeed, Figure 8(b) provides no guidance as to the modeling of any individual roof – as Perlant states, "[w]e can barely discern the general shape of the taller buildings in the middle and the upper left areas of the scene." Perlant at 489.

The remainder of the examples in Perlant likewise do not disclose a three-dimensional model of a roof. *Id*. at 489-90; Fig. 9 (depicting another disparity map whose roofs are "barely discernible"). Likewise, while Figure 10 depicts a method of "visualiz[ing] … a three-dimensional scene" (*id.* at 490), that once again merely refers to the same disparity map techniques, ***not*** a model of any roof. *Id*. at 490-91; Fig. 11.



(a) (b)

FIG. 10. (a) S2 stereo matching result (left). (b) S2 stereo matching result (right).

Figure 11 is more of the same – although Perlant describes Figure 11 as showing "a simple three-dimensional ground truth segmentation that can be visualized as a stereo scene" (*id*. at 490; Fig. 11), that figure merely shows the relative heights of buildings in the images through their brightness or darkness, ***not*** a roof model. *Id.* at 491.

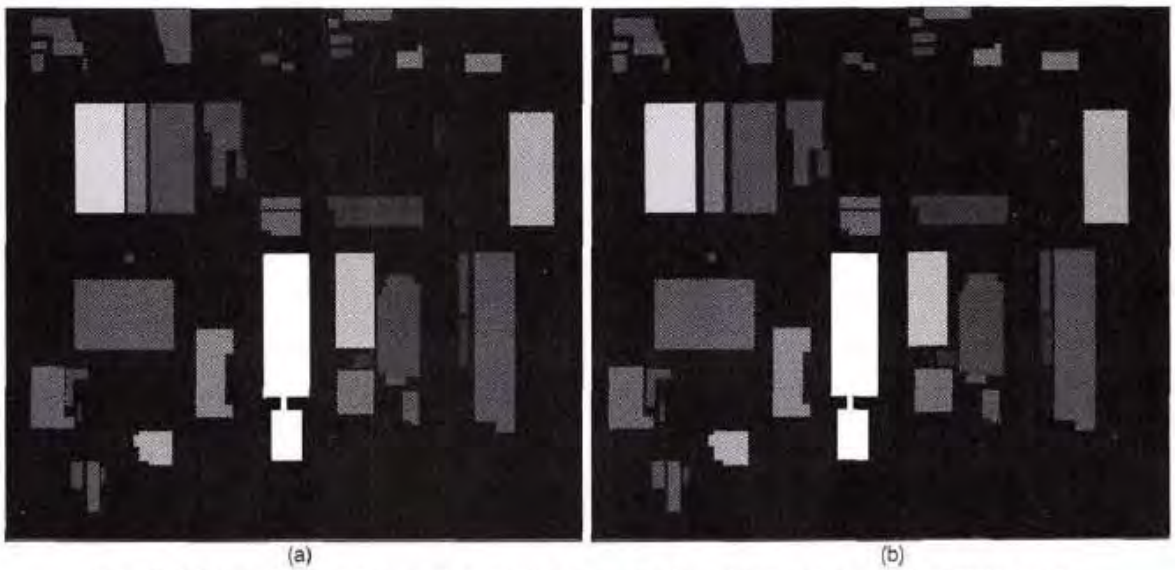


FIG. 11. (a) Ground truth left image for DC38008 scene. (b) Ground truth right image for DC38008 scene.

Petitioner's reliance on Perlant's "three-dimensional visualizations" and "three dimensional images" for this element are misplaced. Pet. at 24-26. Merely using the phrase "three-dimensional" is not enough. Perlant never once uses its registration process to provide a roof model, let alone a three-dimensional one. This is a critical omission – the patents are directed to roof estimation, which cannot be accomplished using Perlant's disparity maps.

Second, Perlant does not disclose a "reference grid" as required by claim 10. Petitioner relies on the gridlines in Figure 4, claiming that figure "shows the results of the fine registration in a reference grid using selected shadow points." Pet. at 25. The gridlines in Figure 4, however, are added ***after*** images are registered, to identify potential misregistrations. *See* Perlant at 482 ("We have superimposed a set of gridlines on both images in order to make it easier to see the actual

misregistration."). By contrast, claim 10 requires the aerial images to be ***registered to an existing reference grid***, ***not*** identify misregistrations using a grid that is only added after registration. *Compare, e.g.,* '152 patent at claim 10 *with* Perlant at 482.

E. Ground 3: The Combination of Hsieh And AppliCad Does Not Render Claim 25 Obvious

Petitioner relies solely on AppliCad for this limitation. *See* Pet. at 30-31. First, the combination of Hsieh and AppliCad cannot render obvious this claim because that combination does not render obvious claim 16 from which claim 25 depends. *See* Sections VI.C.i-ii *supra*; *In re Fine*, 837 F.2d at 1076. Hsieh does not disclose numerous elements of claim 16, and Petitioner does not contend that AppliCad meets any limitations of claim 16. Moreover, as discussed in Section VI.B.ii(b), AppliCad is unable to import a three-dimensional model from Hsieh – one of the numerous reasons why a person of skill in the art would not combine Hsieh with AppliCad – and therefore any report AppliCad would generate could not be "based … on the modified three-dimensional model."

F. Ground 4: The Combination Of Hsieh And Aerowest Does Not Render Claim 15 Obvious

The combination of Hsieh and Aerowest cannot render obvious this claim because that combination does not render obvious claim 12 from which claim 15 depends. *See* Sections VI.C.i-ii *supra*; *see In re Fine*, 837 F.2d at 1076.

Moreover, as discussed in Section VI.B.ii, Hsieh does not export a three-dimensional model, which is required under Petitioner's argument. *See* Pet. at 35-37.

G. Ground 5: Avrahami Does Not Anticipate Any Of The Challenged Claims

i. Avrahami Does Not Disclose "generat[ing] a roof estimate report" (Claims 1, 12, 16, 25)

Petitioner treats the preambles of independent claims 1, 12, and 16 as limiting and identifies general statements regarding a "model[] on a coordinate graph or plane" as purportedly meeting the "generat[ing] a roof estimate report" aspects thereof, as well as the similar limitation of claim 25. *See* Pet. at 41, 47, 50. Petitioner further alleges that "Avrahami discloses a system which creates a report of the roof dimensions" and "discloses a system which transmits roof measurement information." Pet. at 40. But Petitioner's own arguments confirm that neither of these alleged capabilities is present in Avrahami, as Petitioner concedes that material modification and supplementation to the reference is required in order to generate the claimed roof estimate report. For example, Petitioner argues that "the local coordinate system ***can easily be converted*** to actual measurements given the parameters of the camera in which the aerial images were taken," to argue that it discloses "a report of the roof dimensions" and "transmit[ting] roof measurement

information." Pet. at 40. But Avrahami does not contemplate such a conversion, explain how such a conversion would be done, nor discuss why one would be required to accomplish the goals of the reference, *i.e.*, developing algorithms, let alone what would make such a conversion purportedly "easy." Furthermore, Petitioner fails to identify any "reporting" functionality, as is required by the claims.

Petitioner provides no expert testimony to support its bare attorney argument. In fact, Petitioner's expert confirms that Avrahami does not disclose a "roof estimate report," but rather, "Avrahami generates a digital model." *See* Pet. at 53 (citing Ex. 1007 at ¶ 65). But the claimed "roof estimate report" is separate and distinct from the roof model. *See* Section III.B.ii *supra*. Dr. Schuch states that a report "could easily be exported for use in another program to generate a roof estimate report," but conspicuously omits any reference to such capabilities in Avrahami and, like Petitioner, fails to explain what would make such a process purportedly "easy." *See* Ex. 1007 at ¶ 65. This is not anticipation under § 102 as a matter of law for any claims reciting a "roof estimate report." *See Net MoneyIN*, 545 F.3d at 1371; *Liberty Ammunition*, 119 Fed. Cl. at 387.

ii. Avrahami Does Not Disclose "modify[ing] a three-dimensional model of the roof based on the received indication of the feature of the building" (Claims 1, 12, 16)

Avrahami does not disclose "modifying" any alleged roof models based on a received indication of a feature of the building as required by claims 1, 12, and 16. Rather, the entirety of Avrahami is directed to the generation of an original alleged roof model based on the identification of "seed points" corresponding to roof planes on a roof. Avrahami at 46-48. There is no disclosure of modifying that model based on subsequent indications of features. Although Avrahami discloses an automated process for creating polygons relating to the roof planes through an iterative matching process, those iterations are all part of the generation of original alleged roof models based on the same alleged "indications of a feature of the building."

Avrahami begins by describing a semi-automatic algorithm for building a 3D model from "a pair of colored aerial images," which Avrahami refers to as "left" and "right" images. *See* Avrahami at Abstract. "The algorithm consists of several consecutive stages" – which are reflected in Figure 2 and the corresponding text. Nowhere does Avrahami allow for a modification to a roof model, let alone a modification based on an indication of a feature on a first image. Specifically, in the first stage, "the operator needs to point at every distinct planar part of the roof

in the left image." *Id.*; *see also id.* at 44, 46. These points are called "seed points." *See id.* Next there is a "transfer [of] the first seed point[s] to the homologous point ***in the right image***." *See id.* at 45. Although Avrahami discusses an "iterative matching process" to overcome "occlusions" in the left or right images (*id.* at 44), that is part of the overall process for generating the original alleged model. *See id.* At no point other than at the beginning of the process can the system receive an indication of a feature which causes the ***modification*** of the model.

Petitioner's citations to Avrahami confirm these points. Indeed, Petitioner's citations explicitly state that the process includes "three main stages" from which "the outcome is a 3D roof." Pet. at 43. Although Petitioner states that Figure 2 shows "that for each received indication 1 through n, the process continually reconstructs the 3D roof plane based on each received indication" (*id.*), that at best refers to the "iterative matching process" in the construction of the original alleged model. Avrahami at 44. Petitioner identifies no disclosure of modifying a model based on the receipt of an indication of a feature, as required.

The "modifying" requirement is important and is closely intertwined with the other elements of the claims. For instance, the claims require "displaying a projection of the feature from the modified three-dimensional model" onto the first and second aerial images. '152 patent at claims 1, 12, 16. In Avrahami, however,

there is no modified model to display, let alone a feature which produced a modified model. To the contrary, in Avrahami, the alleged modeling process ***merges*** features identified on first and second images in a manner that ***deletes roof planes selected by a user***. Avrahami at 46. This is directly contrary to claimed functionality, and fails to provide one of the key benefits of the invention, as discussed in the specification. *See* '152 patent at 14:57-61 ("the operator can switch between various images of the building roof 407, making refinements to the 3D model by adjusting the wire frame in whichever image is more convenient and/or provides a more suitable perspective/view of the model.").

iii. Avrahami Does Not Disclose "transmitting roof measurement information based at least in part on the modified three-dimensional model" (Claim 9)

Petitioner identifies the general discussion of "CAD and GIS systems" in the introduction of Avrahami as purportedly meeting the "transmitting roof measurement information" aspects of claim 9. *See* Pet. at 46. But Avrahami is not directed to those systems, but rather to "algorithms for semi-automatic 3D spatial polygon extraction from a pair of colored aerial images with a known external model solution." Avrahami at 43. Petitioner fails to identify any information that is actually transmitted, or any disclosure in Avrahami that its proposed algorithm may be implemented in such a system. Indeed, the only "system" to run

Avrahami's algorithm is the MATLAB® program designed to quality test the algorithm for efficiency purposes, not for any sort of exportation or transmission of the roof information. *See* Avrahami at 46 (describing "using the MATLAB® environment, in order to examine the algorithm efficiency"). Instead, Petitioner does little more than quote unrelated passages from Avrahami in its claim chart, which are irrelevant to the claim requirements, and accordingly its argument here should be rejected. *See TRW Auto.*, IPR2014-00294, Paper No. 21, at 4; *In re Fritch*, 972 F.2d at 1266.

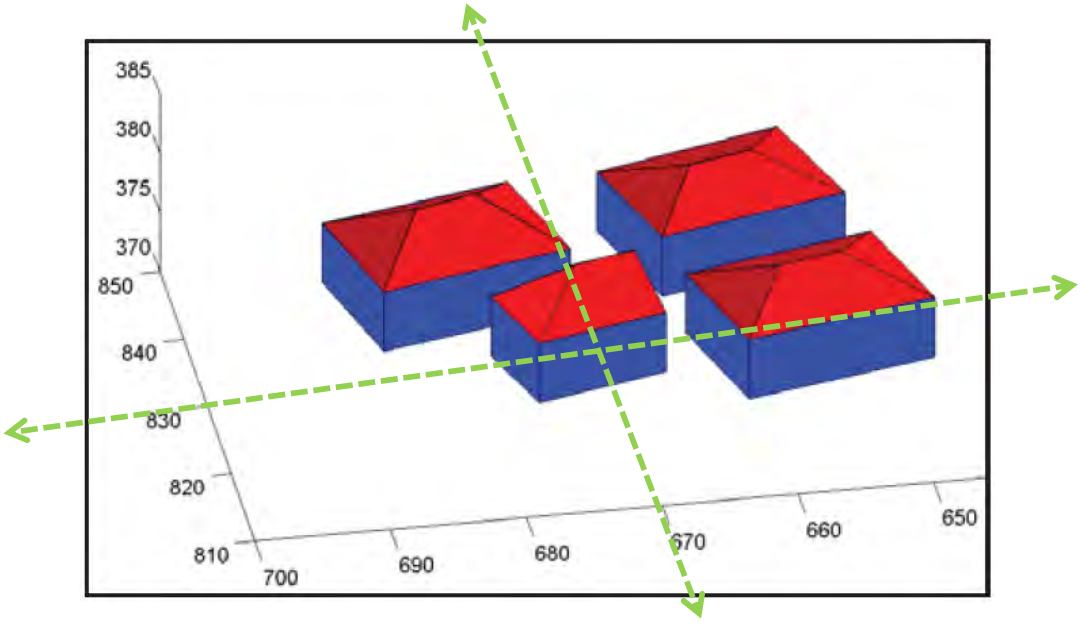
Petitioner further asserts that "Avrahami also discloses transmitting roof measurement information on a coordinate graph or plane." *See* Pet. at 46 (citing Avrahami at 46). But Petitioner again fails to explain how extracting a 3D roof in a local coordinate system for viewing is a transmission of "roof measurement information." Further, as discussed above in Section VI.G.i, Petitioner's prior statements make clear that the output of Avrahami would require a "conver[sion] to actual measurements" (Pet. at 40) to meet the limitation, dooming its anticipation argument here.

iv. Avrahami Does Not Disclose "displaying a marker operable to specify a point on an image; receiving, via the marker, an indication of a point on the first aerial image; and registering, based on the received indication of the point, the aerial image to a reference grid corresponding to the three-dimensional model" (Claim 10)

As with its arguments based on Hsieh in Section VI.C.iv, Petitioner fails to identify numerous elements of this claim, including "a marker operable to specify a point on an image," "registering … the aerial image to a reference grid," as well as an actual "reference grid" in Avrahami. Petitioner relies on Avrahami's recitation of manually selecting "seed points (in 2D) to the centre area … of each roof plane." But those points in Avrahami are not operable in the the same way as the "Marker 410" discussed in Section III.B.i, but rather serve to extract a bounded polygon of the planar roof section, one section at a time. *See* Avrahami at 46. The seed points of Avrahami do not lead to "receiving … an indication of a point" and using that indication to "register[] … the aerial image to a reference grid," and Petitioner fails to offer any explanation suggesting otherwise.

Petitioner then attempts to combine Figures 5 and 6 as support for the claimed registration process. But the images in Figure 5 are nowhere to be found in Figure 6, and Petitioner does not identify anywhere in Avrahami where an aerial image is registered to a reference grid. Nor does Petitioner explain how the seed

points in Figure 5 play any part in registering the aerial image. Moreover, Petitioner's citation to Figure 6 as allegedly demonstrating "correspondence between the aerial images and the three dimensional models" (Pet. at 47) lacks any support in the reference. Indeed, Figure 6 shows four roof depictions that do not appear connected to any aerial image, and as shown by the added dotted lines, are not even aligned – let alone registered – to the provided axes:



Avrahami at Fig. 6. Petitioner provides no explanation of what units the axes depict, nor what each axis relates to, and in fact concedes that Figure 6 does not depict actual measurements. *See* Pet. at 40 ("the local coordinate system ***can easily be converted*** to actual measurements"). There is no indication that Figure 6 includes a reference grid or that such a grid corresponds to any three-dimensional model.

Instead, Avrahami accomplishes matching between two images – through the attempt to match polygonal planar sections from two images – not by registering the images to a common reference grid, but rather "by sliding the left polygon in the direction of the epipolar line in the right image space until the polygons achieve a maximum overlap in the right image space." Pet. at 40 (citing Avrahami at 45). An epipolar line is not a "grid," and therefore Avrahami does not disclose this claim limitation.

v. Avrahami Does Not Disclose "the roof estimation module is part of a network accessible roof modeling program executing on the computer system" (Claim 15)

Petitioner points to no evidence that Avrahami's algorithm is "part of a network accessible roof modeling program." *See, e.g.*, Pet. at 49-50. For example, Petitioner cites to the introduction of Avrahami for support, but that section merely describes uses for 3D city models, *i.e.*, "municipal management, planning, communications, security and defence, tourism, etc.," without elaborating on the algorithm that is Avrahami's actual focus. Again, Petitioner does little more than quote unrelated passages from Avrahami in its claim chart, which are irrelevant to the claim requirements, and accordingly its argument here should be rejected. *See TRW Auto.*, IPR2014-00294, Paper No. 21, at 4; *In re Fritch*, 972 F.2d at 1266.

H. Ground 6: The Combination Of Avrahami And Perlant Does Not Render Claim 10 Obvious

Neither Avrahami nor Perlant discloses what is claimed in claim 10. This combination does not render obvious claim 1 from which this claim depends (*see* Sections VI.G.i-ii *supra*), and as such, the combination cannot render obvious this claim. *See In re Fine*, 837 F.2d at 1076. As discussed in Sections VI.G.i-ii, Avrahami does not disclose numerous elements of claim 1, and Petitioner does not contend that Perlant meets any limitations of claim 1. Additionally, Petitioner relies on the same disclosure in Perlant for this limitation and offers no new disclosure or argument regarding Perlant as compared to Ground 2. Accordingly, for the same reasons described in Section VI.D above, Petitioner's argument should be rejected for those reasons as well.

I. Ground 7: The Combination Of Avrahami And AppliCad Does Not Render Claim 25 Obvious

The combination of Avrahami and AppliCad cannot render obvious this claim because that combination does not render obvious claim 16 from which claim 25 depends. *See* Sections VI.G.i-ii *supra*; *In re Fine*, 837 F.2d at 1076. As discussed in Sections VI.G.i-ii, Avrahami does not disclose numerous elements of claim 16, and Petitioner does not contend that AppliCad meets any limitations of claim 16.

J. Ground 8: The Combination Of Avrahami And Aerowest Does Not Render Claim 15 Obvious

The combination of Avrahami and Aerowest cannot render obvious this claim because that combination does not render obvious claim 12 from which claim 15 depends. *See* Sections VI.G.i-ii *supra*; *In re Fine*, 837 F.2d at 1076. Further, as discussed in Section VI.B.ii, Avrahami does not export a three-dimensional model, and the combination of Avrahami with Aerowest does not remedy these deficiencies.

VII. CONCLUSION

For the reasons discussed herein, Eagle View respectfully requests that the Board decline to institute *inter partes* review of the claims of the '152 Patent challenged by Xactware.

Date: May 23, 2016

Respectfully submitted,

/Gianni Cutri/

Gianni Cutri (Reg. No. 52,791)
gianni.cutri@kirkland.com
KIRKLAND & ELLIS LLP
300 North LaSalle
Chicago, Illinois 60654
Telephone: (312) 862-2000
Facsimile: (312) 862-2200

Jared Barcenas (Reg. No. 61,792)
jared.barcenas@kirkland.com
KIRKLAND ELLIS LLP
601 Lexington Avenue

New York, New York 10022
Telephone: (212) 446-4800
Facsimile: (212) 446-4900
Attorneys for Patent Owner

CERTIFICATE OF COMPLIANCE

This Patent Owner's Preliminary Response complies with the type-volume limitations as mandated in 37 C.F.R § 42.24, totaling 13,992 words. Counsel has relied upon the word count feature provided by Microsoft Word.

/ Gianni Cutri /
Gianni Cutri

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Patent Owner's Preliminary Response was served on May 23, 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:

Mark E. Nikolsky (Reg. No. 48,319) mnikolsky@mccarter.com MCCARTER & ENGLISH 100 Mulberry St. Newark, New Jersey 07102 Telephone: (973) 622-4444 Facsimile: (973) 624-7070	Joseph G. Monaghan (Reg. No. 66,022) jmonaghan@mccarter.com MCCARTER & ENGLISH 100 Mulberry St. Newark, New Jersey 07102 Telephone: (973) 622-4444 Facsimile: (973) 624-7070
Vadim E. Cherkasov (Reg. No. 65,243) vcherkasov@mccarter.com MCCARTER & ENGLISH 1600 Market St. Ste. 3900 Philadelphia, Pennsylvania 19103 Telephone: (215) 979-3800 Facsimile: (215) 979-3899	Amit R. Parikh (Reg. No. 65,271) aparikh@mccarter.com MCCARTER & ENGLISH 100 Mulberry St. Newark, New Jersey 07102 Telephone: (973) 622-4444 Facsimile: (973) 624-7070
Timothy P. Homlish (Reg. No. 66,174) thomlish@mccarter.com MCCARTER & ENGLISH 100 Mulberry St. Newark, New Jersey 07102 Telephone: (973) 622-4444 Facsimile: (973) 624-7070	

/ Gianni Cutri /
Gianni Cutri

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. IPR2016-00591

Patent No. 8,209,152

PATENT OWNER'S PRELIMINARY RESPONSE

TABLE OF CONTENTS

Page

I. Introduction....1

II. Overview of the Claimed Inventions....1

III. Claim Construction....3

A. Legal Standard....3

B. Terms Proposed by Petitioner....3

IV. Standard for Granting *Inter Partes Review*....11

V. Redundancy of Petitioner's Grounds....13

VI. Petitioner Fails to Demonstrate a Reasonable Likelihood That It Will Prevail....14

A. Petitioner Does Not Demonstrate That Hsieh And AppliCad Are Prior Art....14

B. Petitioner Articulates No Reasonable Rationale For Combining The References For Any Of The Six Obviousness Grounds....20

C. Ground 1: Hsieh Does Not Anticipate Any Of The Challenged Claims....38

D. Ground 2: The Combination Of Hsieh And Perlant Does Not Render Claim 10 Obvious....51

E. Ground 3: The Combination of Hsieh And AppliCad Does Not Render Claim 25 Obvious....56

F. Ground 4: The Combination Of Hsieh And Aerowest Does Not Render Claim 15 Obvious....56

G. Ground 5: Avrahami Does Not Anticipate Any Of The Challenged Claims....57

H. Ground 6: The Combination Of Avrahami And Perlant Does Not Render Claim 10 Obvious....66

I. Ground 7: The Combination Of Avrahami And AppliCad Does Not Render Claim 25 Obvious 66

J. Ground 8: The Combination Of Avrahami And Aerowest Does Not Render Claim 15 Obvious 67

VII. Conclusion 67

TABLE OF AUTHORITIES

Page(s)

Cases

505 Games, Inc. v. Babbage Holdings, Inc.,
IPR2014-00954, Paper No. 24 (Dec. 15, 2014).....6, 8

Allergan, Inc. v. Sandoz Inc.,
796 F.3d 1293 (Fed. Cir. 2015) 45

Apple, Inc. v. DSS Tech. Mgmt., Inc.,
IPR2015-00369, Paper No. 14 (Aug. 12, 2015) 15, 18

Bd. of Regents of the Univ. of Texas Sys. v. BENQ Am. Corp.,
533 F.3d 1362 (Fed. Cir. 2008) 7

Blue Calypso LLC v. Groupon, Inc.,
815 F.3d 1331 (Fed. Cir. 2016) 19

BMC Medical Co. Ltd. v. ResMed Ltd.,
IPR2013-01363, Paper No. 25 (Jan. 20, 2016).....45

CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co.,
224 F.3d 1308 (Fed. Cir. 2000) 8

Cisco Systems, Inc. v. C-Cation Techs., LLC,
IPR2014-00454, Paper No. 12 (Aug. 29, 2014) 12

Corning Inc. v. DSM IP Assets B.V.,
IPR2013-00049, Paper No. 8 (May 9, 2014).....30

DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.,
567 F.3d 1314 (Fed. Cir. 2009) 37

EFF v. Personal Audio,
IPR2014-00070, Paper No. 21 (Apr. 18, 2014)..... 16, 19

Ex Parte Fenner Investments, Ltd.,
Appeal No. 2015-006923, 2015 WL 5317395 (P.T.A.B. Aug. 27, 2015) 7

Ex Parte Reinhold Burr,
No. 2009-002693, 2009 WL 3151048 (B.P.A.I. Sept. 29, 2009).....5

In re Bayer,
568 F.2d 1357 (C.C.P.A. 1978) 17

In re Cronyn,
890 F.2d 1158 (Fed. Cir. 1989) 15, 17

In re Fine,
837 F.2d 1071 (Fed. Cir. 1988) 51, 56, 66

In re Fritch,
972 F.2d 1260 (Fed. Cir. 1992) 48, 49, 62, 65

In re Lister,
583 F.3d 1307 (Fed. Cir. 2009) 17

In re NTP, Inc.,
654 F.3d 1279 (Fed. Cir. 2011) 3

In re Suitco Surface, Inc.,
603 F.3d 1255 (Fed. Cir. 2010) 3

Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.,
No. 2015-1693, 2016 WL 2620512 (Fed. Cir. May 9, 2016)..... 12, 13

InTouch Techs., Inc. v. VGO Commc'ns., Inc.,
751 F.3d 1327 (Fed. Cir. 2014) 23, 28

Lava Trading, Inc. v. Sonic Trading Mgmt., LLC,
445 F.3d 1348 (Fed. Cir. 2006) 9

Liberty Mutual Ins. Co. v. Progressive Casualty Ins. Co.,
CBM2012-00003, Paper No. 7 (Oct. 25, 2012)..... 13, 14

Merck & Co. v. Teva Pharm. USA, Inc.,
395 F.3d 1364 (Fed. Cir. 2005) 5, 8

Microsoft Corp. v. Proxyconn, Inc.,
789 F.3d 1292 (Fed. Cir. 2015) 3

Net MoneyIN, Inc. v. VeriSign, Inc.,
545 F.3d 1359 (Fed. Cir. 2008) 39, 58

Oxford Nanopore Technologies v. Univ. of Washington,
IPR2014-00513, Paper No. 12 (Sept. 15, 2014) 15

Power Mosfet Techs., L.L.C. v. Siemens AG,
378 F.3d 1396 (Fed. Cir. 2004) 5, 8

Purdue Pharma L.P. v. Depomed, Inc.,
No. 2015-2029, 2016 WL 1161229 (Fed. Cir. Mar. 24, 2016) ..... passim

Qualcomm v. ParkerVision,
IPR2015-01825, Paper No. 8 (PTAB Mar. 8, 2016) 18, 34, 35

Rothman v. Target Corp.,
556 F.3d 1310 (Fed. Cir. 2009) 37

Samsung Electronics Co. v. Rembrandt Wireless Techs., LP,
IPR2014-00514, Paper No. 18 (Sept. 9, 2014) 16

ServiceNow, Inc. v. Hewlett-Packard Co.,
IPR2015-00707, Paper No. 14 (Nov. 2, 2015) 18

Spears v. Holland,
Interf. No. 104,681, Paper No. 30 (B.P.A.I. Mar. 13, 2002) 12

Summit 6, LLC v. Samsung Elecs. Co.,
802 F.3d 1283 (Fed. Cir. 2015) 7

Symantec v. Trustees of Columbia Univ.,
IPR2015-00371, Paper No. 13 (June 17, 2015)..... 15, 17, 18

Tec Air, Inc. v. Denso Mfg. Mich. Inc.,
192 F.3d 1353 (Fed. Cir. 1999) 45

TRW Automotive US LLC v. Magna Elecs. Inc.,
IPR2014-00294, Paper No. 21 (Aug. 27, 2014) 29, 48, 62, 65

Zetec Inc. v. Westinghouse Electric Company LLC.,
IPR2014-00384, Paper No. 10 (July 23, 2014) 13

Statutes

35 U.S.C. § 102 39

35 U.S.C. § 314(a) 1, 12, 14, 15

35 U.S.C. § 314(b) 15

37 C.F.R. § 42.108(b) 12

37 C.F.R. § 42.108(c).....12

U.S. Patent No. 8,209,152..... passim

TABLE OF EXHIBITS

Exhibit No.	Description
2001	Weisstein, Eric W. "Combinatorics." *From* MathWorld - A Wolfram Web Resource. http://mathworld.wolfram.com/Combinatorics.html.

I. INTRODUCTION

Xactware Solutions, Inc.'s Petition should be denied. First, Petitioner has failed to make a threshold showing that Hsieh and AppliCad – references Petitioner relies on for five of the eight proposed grounds of the Petition – were publicly available "printed publications" prior to the '152 patent's priority date. Second, Petitioner offers no reasonable rationale for combining the references in any of its proposed obviousness combinations, *i.e.*, Grounds 2-4 and 6-8. Third, the combinations fail on the merits for numerous reasons as detailed in Sections VI.C-VI.J *infra*. Fourth, the Petition includes multiple redundant grounds that should not be instituted. Accordingly, Petitioner has not met its burden of showing a reasonable likelihood that it will prevail with respect to at least one of the challenged claims, and the Board should decline to institute trial. *See* 35 U.S.C. § 314(a).

II. OVERVIEW OF THE CLAIMED INVENTIONS

The '152 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* U.S. Patent No. 8,209,152 ("the '152 patent") (Ex. 1001) at 1:16-20. Generation of roof estimate report outputs tailored to the needs of roofers and insurance companies is central to the claimed inventions, as is the use

of corresponding line drawings to identify roof structure elements among multiple aerial images. Here, Petitioner proposes eight grounds of invalidity:

No.	Type	References	Challenged Claims
Ground 1	§ 102	Hsieh	1, 3, 6, 8-10, 12-16, 19, 22-23 & 25
Ground 2	§ 103	Hsieh and Perlant	10
Ground 3	§ 103	Hsieh and AppliCad	25
Ground 4	§ 103	Hsieh and Aerowest	15
Ground 5	§ 102	Avrahami	1, 3, 6, 9-10, 12-16, 19, 22-23 & 25
Ground 6	§ 103	Avrahami and Perlant	10
Ground 7	§ 103	Avrahami and AppliCad	25
Ground 8	§ 103	Avrahami and Aerowest	15

Petitioner has challenged 15 claims of the '152 patent, three of which are independent claims (1, 12, and 16). Each of the challenged independent claims is directed to technological steps associated with "generating a roof estimate report" from two aerial images by using corresponding line drawings to identify specific roof features in the building of a three-dimensional roof model. '152 patent at claims 1, 12, and 16. And the dependent claims add further requirements to those steps, including with respect to generating the "roof estimate report."

III. CLAIM CONSTRUCTION

A. Legal Standard

In giving claim terms their broadest reasonable construction, "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).

B. Terms Proposed by Petitioner

i. "reference grid"

Petitioner's construction – "a data structure to which one or more images are registered" (Pet. at 6) – fails to give meaning to the term "grid." Specifically, by suggesting that a "grid" can be any data structure, Petitioner's construction reads the word "grid" out of the claim term, and potentially allows for data structures that are in formats other than a grid. But that is not what is claimed.

As the specification uniformly confirms, the reference grid is a three-dimensional coordinate system which serves as a common reference for registering images. '152 patent at 3:12-16; 9:61-10:4. By associating coordinates on the images with coordinates on the reference grid, features on the images can be included in the 3D model produced by the system. *Id*. That the reference grid is a coordinate system for the 3D model is explicitly confirmed in the specification:

> [I]mage registration includes determining a transformation between each of one or more images and a uniform 3D reference grid. ***The uniform 3D reference grid is used as a coordinate system for a 3D model of the roof***. By registering multiple images to the reference grid, an operator may indicate a roof feature on an image (such as a roof edge), which may then be translated from the coordinate system of the image to the coordinate system of the reference grid, for purposes of including of the indicated feature in the 3D model.

Id. at 9:62-10:4. This is not an isolated instance – the specification consistently confirms that the reference grid is a three-dimensional coordinate system, and not merely any form of "data structure" as Petitioner contends. *Id.* at 9:61-10:4 (describing a "***uniform 3D reference grid***")[1]; 20:61-66 (registering aerial images to "***a single, uniform reference grid***."). According to the specification, the three-dimensional coordinate system is necessary for generating the three-dimensional

[1] Emphasis supplied unless otherwise noted.

model. *Id*. at 9:65-10:4. And, the claimed "marker" – which allows for identification of a feature on multiple images included in the model –specifies three-dimensional coordinates (X, Y, and Z axes) on the reference grid. *Id*. at 10:5-11.

Petitioner's proposed construction unnecessarily broadens the claim scope and is inconsistent with the plain language of the claim – a "reference grid" is a specific type of data structure – *i.e.*, a three-dimensional coordinate system as repeatedly confirmed in the specification – that is required to specifically "correspond[] to the three-dimensional model." *See* '152 patent at claim 10. This introduces an unnecessary ambiguity into a claim term that, in its original form, requires no further construction. Moreover, where, as here, Petitioner's proposed construction fails to "give[] meaning to all the terms of the claim" – in this case, the term "grid" – it 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) ("interpretations 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 No. 24 (Dec. 15, 2014) at 6 ("We see no reason to read this term out of the claim.").

Petitioner alleges that its construction is supported by the specification, but fails to provide any actual explanation for how its citation to the general description of one example embodiment supports in any way its proposed construction. *See* Pet. at 6-7. Similarly, Petitioner's reliance on conclusory and wholly unsupported expert testimony – Dr. Schuch provides a total of two sentences on the "reference grid" but no citations to the specification – should be disregarded. *See* Ex. 1007 at ¶ 36 (stating only that "[a] person of ordinary skill in the art would understand the term 'reference grid' to mean a data structure to which one or more aerial images are registered.").

To the extent the Board is inclined to construe the term "reference grid," such a construction must ensure that this limitation pertains to a three-dimension coordinate system, not merely any data structure.

ii. "roof estimate report"

Petitioner's proposed construction of "roof estimate report" is also incorrect and should be rejected because no construction is needed. The term "roof estimate report" is easily understood by plain and ordinary meaning: a report generated by the roof estimation system. Although there are additional requirements for the roof estimate report, those are found explicitly in the claim language, relating to the

specific contents of the report. *See, e.g.*, '152 patent at claims 12 ("A computing system for generating a roof estimate report [including] roof measurement information based at least in part on the modified three-dimensional model"), 25 (same). As such, no further definition is needed beyond the explicit claim language. *See Summit 6, LLC v. Samsung Elecs. Co.*, 802 F.3d 1283, 1291 (Fed. Cir. 2015); *Ex Parte Fenner Investments, Ltd.*, Appeal No. 2015-006923, 2015 WL 5317395, at *4 (P.T.A.B. Aug. 27, 2015).

Petitioner's proposed construction – that a "roof estimate report" should be construed as "a representation of a roof which allows measurement information of at least one feature of the roof to be conveyed" (Pet. at 7) – improperly modifies the unambiguous claim language and is inconsistent with the specification. First, Petitioner's proposed construction eliminates the requirement that the claimed "roof estimate report" be an actual "report." Nowhere in Petitioner's construction does it reference the critical "report" requirement of the claims at issue, or anything resembling a report. Instead, Petitioner substitutes the claimed "report" with a "representation of a roof." Pet. at 7. But "representations" – such as the claimed roof model or aerial images – are explicitly contrasted in the claim language with the separately claimed "report" that is generated ***based on those items***, and is accordingly improper. *Bd. of Regents of the Univ. of Texas Sys. v. BENQ Am. Corp.*, 533 F.3d 1362, 1371 (Fed. Cir. 2008) ("The fact that the claim

distinguishes between [one term] and [another term in the same claim] is significant," because "[d]ifferent claim terms are presumed to have different meanings."); *see also CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co.*, 224 F.3d 1308, 1317 (Fed. Cir. 2000).

For example, claim 25 recites "generating a roof estimate report ***based at least in part on the modified three-dimensional model*** [of the roof]," explicitly confirming that the claimed "report" is not the same as a "representation" of the roof (the "model") but is instead "based on" that representation. *See, e.g.*, '152 patent at claims 16 and 25; *see also id.* at claim 12. Similarly, claims 1, 12, and 16 explicitly distinguish between "modify[ing] a three-dimensional model of the roof" and subsequently "generating a roof estimate report". *See, e.g., id.* at claims 1 (separately reciting "generating a roof estimate report" and "modifying a three-dimensional model of the roof"), 12 (same), 16 (same). Petitioner's construction improperly conflates these requirements, by merging the "representation" steps of the claims involving roof "models" with the "report generation" steps. This would deprive key aspects of the claims of meaning – an approach which is never proper. *See Merck*, 395 F.3d at 1372; *Power Mosfet Techs.*, 378 F.3d at 1410; *505 Games, Inc.*, IPR2014-00954, Paper No. 24, at 6.

Petitioner's construction is also at odds with the specification, which repeatedly confirms – from the "Summary of Invention" on – that

"representations" of a roof (such as a model) are different from the claimed roof estimate report. For example, in the "Summary of the Invention" – just as in the claims – the specification explicitly confirms that the claimed "roof estimation report" is not the same as a "representation" of the roof (the "model") but is instead "based on" that representation. *See, e.g.*, '152 patent at 2:7-10, 2:66-67, 6:29-38.

But the explicit differences between "representations" and roof reports themselves do not end there. The specification states that "one or more of the models stored as model data 106 are provided directly to the customer or other computing system, ***without first being transformed into a report***." *Id*. at 7:17-26. Petitioner's construction is irreconcilably inconsistent with this embodiment, as the model itself would be a "report," and making it impossible to use a model without it "first being transformed into a report." *Id.* Such a construction – *i.e.,* that would exclude embodiments from the scope of the claims – is improper in these circumstances. *Lava Trading, Inc. v. Sonic Trading Mgmt., LLC,* 445 F.3d 1348, 1353-55 (Fed. Cir. 2006) (rejecting claim construction that "excludes embodiments disclosed in the specification").

Indeed, the specification describes in detail embodiments of the claimed roof estimate reports, which include a variety of qualities that go far beyond being a mere "representation of a roof which allows measurement information … to be conveyed." For example, the roof estimate report "typically includes one or more

plan (top-down) views of the model, annotated with numerical values for the slope, area, and/or lengths of the edges of at least some of the plurality of planar roof sections of the model of the roof," but can also include "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 (top, side, front, etc.)." *See, e.g.*, '152 patent at 6:36-46; Figs. 3A-3E. Generating roof reports also involves considerations for making the report "readable to a human user," "including automatically determining an optimal or near-optimal label font size, label position, and/or label orientation." *See id.* at 6:48-58. Moreover, the roof reports can even include such features as "determining a cost estimate, based on specified costs, such as those of materials, labor, transportation, etc." or "the attributes of the particular roof, such as area, pitch, etc." *Id*. at 6:59-67. By contrast, Petitioner's "representations" lack numerous features that the claims and specification explicitly identify as key aspects of the claimed reports.

The claims and specification also repeatedly confirm that other "representation[s] of a roof," such as aerial images, are separate from the actual report. *See, e.g.*, '152 patent at claims 1 (separately reciting "generating a roof estimate report" and "displaying a first and second aerial image"), 12 (same); *see also id*. at 2:54-57, 3:61-63. Petitioner's proposed construction would cover such aerial images as "representations" of the roof, a result that makes little sense given

the clear distinction between the images and the reports set forth in the claims and specification.

Petitioner's proposal also suffers from other problems. For example, although the claim language explicitly requires that the roof estimate report include certain features (such as measurements of the building), Petitioner's construction merely states that the representation "***allows*** measurement information of at least one feature of the roof to be conveyed." And, while Petitioner alleges that its construction is supported by the specification, it fails to explain how its citation to the description of one example embodiment justifies deviating from the explicit claim language and repeated statements in the specification setting out differences between the models and images on the one hand, and the roof estimation reports on the other. *See* Pet. at 7. Similarly, Petitioner's reliance on conclusory and wholly unsupported expert testimony – Dr. Schuch provides a total of two sentences but no citations to the specification – should be disregarded. *See* Ex. 1007 at ¶ 37.

At bottom, no further construction of "roof estimate report" is necessary. Certainly, the Board should not adopt Petitioner's proposal, which contradicts the claim language and conflicts with the description in the specification.

IV. STANDARD FOR GRANTING *INTER PARTES REVIEW*

A petition for *inter partes* review may only be granted when "the information presented in the petition … shows that there is a reasonable likelihood

that the petitioner would prevail with respect to at least one of the claims challenged in the petition." 35 U.S.C. § 314(a); *see also* 37 C.F.R. § 42.108(c). Petitioner bears the burden of showing the statutory threshold has been met. *See* Office Patent Trial Practice Guide, 77 Fed. Reg. 48756 (Aug. 14, 2012). In determining whether to institute an *inter partes* review, the Board may "deny some or all grounds for unpatentability for some or all of the challenged claims." 37 C.F.R. § 42.108(b); *see also* 35 U.S.C. § 314(a).

It is Petitioner's duty to provide sufficient grounds for the institution of a review "focus[ing] on concise, well organized, easy-to-follow arguments supported by readily identifiable evidence of record." *Cisco Systems, Inc. v. C-Cation Techs., LLC*, IPR2014-00454, Paper No. 12 (Aug. 29, 2014) at 11. "The Board will not take on the role of advocate for a party, trying to make out a case the party has not adequately stated." *See, e.g.*, Standing Order ¶ 121.5.2 (B.P.A.I. Mar. 8, 2011); *see also Spears v. Holland*, Interf. No. 104,681, Paper No. 30 (B.P.A.I. Mar. 13, 2002) at 15. Further, "[u]nlike district court litigation—where parties have greater freedom to revise and develop their arguments over time and in response to newly discovered material—the expedited nature of IPRs bring with it an obligation for petitioners to make their case in their petition to institute." *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, No. 2015-1693, 2016 WL 2620512, at *8 (Fed. Cir. May 9, 2016). "While the Board's requirements are

strict ones, they are requirements of which petitioners are aware when they seek to institute an IPR." *Id*.

V. REDUNDANCY OF PETITIONER'S GROUNDS

Petitioner's grounds of invalidity are horizontally and vertically redundant. *See Liberty Mutual Ins. Co. v. Progressive Casualty Ins. Co.*, CBM2012-00003, Paper No. 7 (Oct. 25, 2012).

Petitioner identifies both Hsieh (Ground 1) and Avrahami (Ground 5) as allegedly anticipating claims 1, 3, 6, 9-10, 12-16, 19, 22-23, and 25. These grounds are horizontally redundant because the Petition fails to identify what is missing between Grounds 1 and 5 that necessitates having both. The same is true for Grounds 2 and 6, Grounds 3 and 7, and Grounds 4 and 8 proposing different obviousness combinations for dependent claims 10, 25, and 15.

Petitioner fails to state the differences between challenged claims and the prior art. The invitation to the PTAB to embark on an examination of the patent, rather than an adjudication of fully developed grounds, is an abuse of PTAB resources and places an unfair undue burden on the Patent Owner. Accordingly, these grounds must be declined. *Zetec Inc. v. Westinghouse Electric Company LLC*, IPR2014-00384, Paper No. 10 (July 23, 2014) at 14.

Further, Petitioner's proposed grounds based on Hsieh (Ground 1) and the combinations of Hsieh with Perlant (Ground 2), AppliCad (Ground 3), and

Aerowest (Ground 4) are vertically redundant. "In the former case, fewer references than the entire combination are sufficient to render a claim obvious, and in the latter case the entire combination is relied on to render the same claim obvious." *Liberty Mutual Ins. Co.*, CBM2012-00003, Paper No. 7, at 3. The same is true of Petitioner's proposed grounds based on Avrahami (Ground 5) and the combinations of Avrahami with Perlant (Ground 6), AppliCad (Ground 7), and Aerowest (Ground 8). "There must be an explanation of why the reliance in part may be the stronger assertion as applied in certain instances **and** why the reliance in whole may also be the stronger assertion in other instances." *Id.* (emphasis in original). No such explanation exists for any of the proposed grounds.

VI. PETITIONER FAILS TO DEMONSTRATE A REASONABLE LIKELIHOOD THAT IT WILL PREVAIL

A. Petitioner Does Not Demonstrate That Hsieh And AppliCad Are Prior Art

i. Legal Standard for Establishing A Reference As Publicly Available Prior Art

Pursuant to 35 U.S.C. § 314(a), Petitioner has the burden to establish in its Petition a reasonable likelihood of success, including providing competent evidence sufficient for a threshold showing that the asserted references are "printed publications." *See Apple, Inc. v. DSS Tech. Mgmt., Inc.*, IPR2015-00369, Paper

No. 14 (Aug. 12, 2015) at 10 (citing 35 U.S.C. § 314(a)). But Petitioner has failed to establish the public accessibility of Hsieh and AppliCad and as such, the Board should not institute trial on Grounds 1, 2, 3, 4, and/or 7.

Public accessibility is the touchstone for determining whether a particular reference qualifies as a printed publication. *See SRI Int'l, Inc.*, 511 F.3d at 1194-95. The mere fact that a member of the interested public possibly could have accessed the document is not enough to establish public availability. *Id.* at 1196; *see also In re Cronyn*, 890 F.2d 1158, 1161 (Fed. Cir. 1989). Rather, a given reference is deemed publicly accessible upon a showing that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it. *See SRI Int'l, Inc.*, 511 F.3d at 1194-95.

Where a Petitioner fails to make a preliminary showing that the relied-upon art was publicly accessible, the Board routinely declines to institute trial as there is no reasonable likelihood that the petitioner will prevail. *See* 35 U.S.C. § 314(b); *Symantec v. Trustees of Columbia Univ.*, IPR2015-00371, Paper No. 13 (June 17, 2015) at 9 (declining to institute where Petitioner "failed to meet its burden of at least a preliminary showing" of public availability); *Oxford Nanopore Technologies v. Univ. of Washington*, IPR2014-00513, Paper No. 12 (Sept. 15, 2014) at 17-18 (declining to institute where Petitioner did not show a "reasonable likelihood" that references constituted prior art).

Conclusory statements concerning public availability, such as those presented here, are insufficient. Rather, the Board requires petitioners to bring forth legitimate evidence of public availability before instituting trial. For example, in *Samsung Electronics Co. v. Rembrandt Wireless Techs., LP*, the Board found no public availability where the petitioner's declarant addressed only whether any person could conceivably have accessed the publication, and not whether an ordinarily skilled individual, exercising reasonable diligence would have found it. *See* IPR2014-00514, Paper No. 18 (Sept. 9, 2014) at 9-10. In *EFF v. Personal Audio*, the Board found that neither of the petitioner's declarants addressed how one of ordinary skill, exercising reasonable diligence, would have been able to find the Internet address of the prior art reference. *See* IPR2014-00070, Paper No. 21 (Apr. 18, 2014) at 23-24. As a result, the Board found the petitioner's showing of public availability to be insufficient. *Id*. Petitioner has similarly not met its burden with respect to Hsieh or AppliCad, and the Board should decline to institute trial on all Grounds that rely on them.

ii. Hsieh

Petitioner identifies the Hsieh reference, a research paper purportedly deposited at the University Libraries of Carnegie Mellon University (Ex. 1003) as prior art and uses the date of "November 1995" in its citations thereof. *See* Pet. at List of Exhibits. But Petitioner has not made a facial showing that this Hsieh

reference was publicly available at any time before the priority date of the '152 patent. *See* Pet. at 4-5.

First, there is no evidence that Hsieh was indexed or otherwise made accessible to the public, as required. *See SRI Int'l*, 511 F.3d at 1194; *see also In re Lister*, 583 F.3d 1307, 1317 (Fed. Cir. 2009) (declining to find public availability based only on "pure speculation" about the practices of the document's custodian). The Federal Circuit has consistently rejected the public availability and accessibility of materials in university libraries without evidence of indexing or cataloguing that would provide a way for interested members of the public to locate the reference. *See In re Cronyn*, 890 F.2d at 1161 (thesis not catalogued or indexed by subject matter, only by author's name); *In re Bayer*, 568 F.2d 1357, 1362 (C.C.P.A. 1978) (thesis uncatalogued and unshelved as of priority date). Petitioner provides no support that Hsieh was indexed or cataloged such that interested members of the public could find it, or any other similar information establishing that it was publicly available as of the priority date of the '152 patent, *i.e.*, October 31, 2008.

The Board has previously resolved an analogous petition by declining to institute trial. In *Symantec*, Petitioner did not provide evidence "tending to show when the [Cardinale] thesis actually may have been released or distributed to the public." *Symantec*, IPR2015-00371, Paper No. 13, at 8. Even though the thesis in

question included "an Abstract and a list of subject terms," the Board found that Petitioner failed to meet its burden because it pointed to no evidence that the thesis was entered into an electronic database prior to the priority date, "much less into a publicly accessible database prior to the critical date." *Id.* at 8-9. Here, the Petition does not make even a preliminary showing that Hsieh was physically available to the public, that Hsieh was shelved in a manner that it could be located by members of the public, or that Hsieh was indexed such that interested members of the public could find it through the exercise of reasonable diligence.

Second, while the date on Hsieh's cover page – November 1995 – may indicate the date of its creation, it is insufficient on its own to establish public accessibility – additional evidence confirming that Hsieh was actually available and accessible on that date is required. *See SRI Int'l*, 511 F.3d at 1197; *In re Bayer*, 568 F.2d at 1362; *Qualcomm v. ParkerVision*, IPR2015-01825, Paper No. 8 (PTAB Mar. 8, 2016) at 19-20 (denying institution where there was no evidence of the normal practices of the library when receiving books); *Symantec*, IPR2015-00371, Paper No. 13, at 8-9 (denying institution where no evidence when the reference was indexed or entered into an electronic library database). Moreover, the "November 1995" date is unsubstantiated hearsay. *See ServiceNow, Inc. v. Hewlett-Packard Co.*, IPR2015-00707, Paper No. 14 (Nov. 2, 2015) at 9-10; *Apple, Inc.*, IPR2015-00369, Paper No. 14, at 6.

Accordingly, the Board should decline to institute trial on Grounds 1, 2, 3, and 4, which rely exclusively on Hsieh for numerous claim elements.

iii. AppliCad

The Board should additionally decline to institute trial on Grounds 3 and 7 because Petitioner likewise failed to meet its burden to demonstrate AppliCad is prior art. While Petitioner identifies the AppliCad reference as prior art and accords it a date of "November 2002," Petitioner has not made a sufficient showing that AppliCad was publicly accessible as of the priority date of the '152 patent, *i.e.*, October 31, 2008. Petitioner's "corrected" AppliCad reference (Corrected Ex. 1005) includes an affidavit which attests to the date when the document was available at a particular "website address," on June 18, 2005. Ex. 1005 at 48, 51.

Mere publication on the Internet, however, is ***insufficient*** to establish public availability. *SRI Int'l*, 511 F.3d at 1197. In *Blue Calypso LLC v. Groupon, Inc.*, the Federal Circuit found that without evidence of how an "interested party could navigate" to the reference at issue, the Board correctly rejected invalidity grounds based on that reference. *See* 815 F.3d 1331, 1350 (Fed. Cir. 2016).

The Board similarly declined to institute trial in *EFF v. PersonalAudio*. While the reference at issue there was potentially available through a URL, this was not sufficient evidence of "public availability" because there had been no

showing that the URL was "disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence can locate it." *See* IPR2014-00070, Paper No. 21, at 22.

Here, Petitioner's affidavit merely identifies a URL for the AppliCad reference. Nowhere does the affidavit address whether this URL was made available to interested persons of ordinary skill in the art. *See SRI Int'l*, 511 F.3d at 1194-95*; EFF*, IPR2014-00070, Paper No. 21, at 23-24. As confirmed by numerous authorities, the affidavit does not make a preliminary showing that the AppliCad reference was publicly available as of the priority date of the '152 patent. *See Blue Calypso*, 815 F.3d at 1350; *SRI Int'l*, 511 F.3d at 1197; *EFF*, IPR2014-00070, Paper No. 21, at 23-24. Accordingly, the Board should decline to institute trial on Grounds 3 and 7, which exclusively rely on AppliCad for claim limitations.

B. Petitioner Articulates No Reasonable Rationale For Combining The References For Any Of The Six Obviousness Grounds

i. Legal Standard For Combining References In Obviousness Combinations

For the combinations in each of its six obviousness grounds, Petitioner has "failed to sufficiently show that a skilled artisan would have had a reason to combine the teachings of [the cited references] to achieve the claimed invention"

of the '152 patent, and the Board should not institute trial for this additional reason as well. *See Purdue Pharma L.P. v. Depomed, Inc.*, No. 2015-2029, 2016 WL 1161229, at *6 (Fed. Cir. Mar. 24, 2016) (affirming Board's final written decision that petitioner failed to prove challenged claims unpatentable as obvious over the cited prior art).

"Obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination." *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011) (citing *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)). It is "important to identify ***a reason*** that would have prompted a person of ordinary skill in the relevant field to combine the elements ***in the way*** the claimed new invention does." *Purdue*, 2016 WL 1161229, at *5 (quoting *KSR*, 550 U.S. at 418) (emphasis in original). A patent challenger must demonstrate both "that a skilled artisan would have been motivated 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 in doing so." *Intelligent Bio-Sys. Inc.*, 2016 WL 2620512, at *6 (internal quotation marks and citation omitted); *see also Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1379 (Fed. Cir. 2012).

Petitioner has fallen far short of making these required showings here, and the Board routinely declines to institute trial in these circumstances. *See, e.g.*,

Funai Elec. Co. v. Gold Charm Ltd., IPR2015-01448, Paper No. 13 (Jan. 11, 2016) at 17 (declining to institute on obviousness grounds where Petitioner failed to establish motivation to combine); *Stryker Corp. v. Karl Storz Endoscopy-Am., Inc.*, IPR2015-00672, Paper No. 9 (Sept. 1, 2015) (same); *Smart Modular Techs., Inc. v. Netlist, Inc.*, IPR2014-01373, Paper No. 16 (Mar. 13, 2015) (same).

ii. Petitioner Improperly Relies On "Mere Conclusory Statements" And Hindsight As Its Alleged Basis For Combining The References In Grounds 2-4 and 6-8

(a) Petitioner Fails to Demonstrate It Would Have Been Obvious To Combine Hsieh With Perlant (Ground 2)

Petitioner's proposed analysis in support of the combination of Hsieh and Perlant (Ground 2) should be rejected. Specifically, Petitioner contends that "[a] person of ordinary skill in the art would have combined the scene registration process in Perlant with the three-dimension roof generation of Hsieh," and that "Perlant discloses the ability to augment 3D model generation by scene registration in aerial images." *See* Pet. at 24. But that is incorrect – the alleged registration process in Perlant has nothing to do with the generation of roof models. As discussed in more detail below in Section VI.D *infra*, Perlant's discussion of "registration" concerns the generation of "disparity maps" which show the relative heights between buildings in the images – ***not*** a three-dimensional model of any

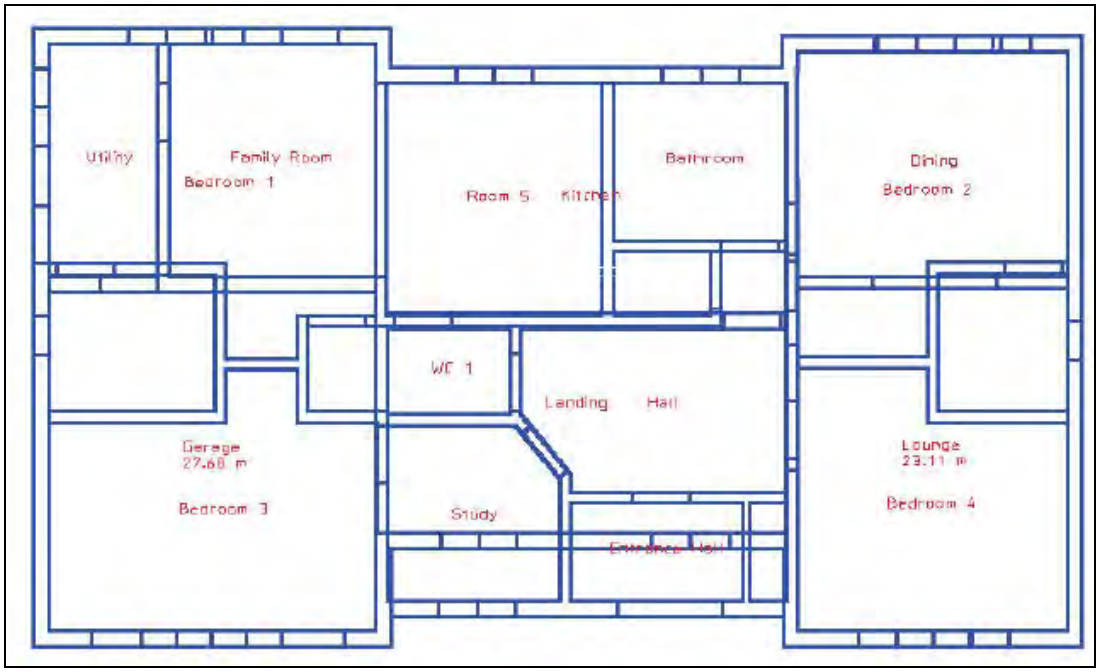
particular roof. *See* Perlant at 490-492. Contrary to Petitioner' assertions, Perlant's references to "three-dimensional visualizations" and "three dimensional images" are not enough. Perlant never once uses its registration process to provide a roof model, let alone a three-dimensional one. There would be no reason to combine Perlant's scene registration feature with Hsieh, because Perlant does not use it to construct three-dimensional models, *i.e.* the references are directed to very different purposes. One of ordinary skill would thus have no expectation of successfully combining Hsieh and Perlant and Petitioner's omission of any reasoning behind its proposed combination is a critical failure that supports denial of institution. *InTouch Techs., Inc. v. VGO Commc'ns., Inc.*, 751 F.3d 1327, 1352 (Fed. Cir. 2014) ("A reason for combining disparate prior art references is a critical component of an obviousness analysis; 'this analysis should be made explicit.'"); *KSR*, 550 U.S. at 418 (requiring "articulated reasoning with some rational underpinning" to make the asserted combinations).

(b) Petitioner Fails to Demonstrate It Would Have Been Obvious To Combine Hsieh With AppliCad (Ground 3)

Petitioner has not articulated a reasonable rationale for combining Hsieh and AppliCad to achieve any of the claimed inventions with "a reasonable expectation of success." *Purdue*, 2016 WL 1161229, at *5. Moreover, an actual evaluation of

the references themselves confirms that Petitioner's conclusory statements are incorrect.

Petitioner contends that "Applicad discloses the ability to import roof models from other systems" and thus "a person of ordinary skill in the art would have combined the roof reporting functionality of Applicad with the three-dimensional roof generation of Hsieh." *See, e.g.*, Pet. at 29. These conclusory statements, however, are incorrect. Specifically, AppliCad ***does not*** allow for the importation of three-dimensional roof models from other systems, but instead only provides for the importation of ***two-dimensional*** "roof or building outlines," like the one illustrated below:



See AppliCad at 4. According to AppliCad, two-dimensional outlines can be saved in "the .dxf format (drawing exchange format)" and imported into the system. *See id.* After the two-dimensional outline is imported, AppliCad relies on ***a user*** to create a three-dimensional model via the "Digitise Outline" command. *See id.* Using that command, the user manually enters roof measurement information, *e.g.* "the pitch or slope of the roof and the eave offset from the wall[s]." *Id.* Although AppliCad states that then "the roof [model] is generated automatically" (*id.*), the slope and eave offsets – *i.e.,* the information that allegedly converts the two-dimensional model into a three-dimensional model – ***must*** be entered manually, and there is no ability to ***import*** a three dimensional model as Petitioner asserts must occur as the basis for its proposed motivation to combine. *See id.* at 4; *see also* Pet. at 29.

The user also has the option to scan in the printed two-dimensional roof outlines, rather than importing them from a .dxf file (*see* AppliCad at 6) but this option likewise does not involve importing a three-dimensional model and a user must "enter the true measurement[s]" before such a model is formed. *Id.* Thus, Petitioner's assertion that "[a] person of ordinary skill in the art would have combined the roof reporting functionality of Applicad with the three-dimensional roof generation of Hsieh" (Pet. at 29) is incorrect – to the contrary, AppliCad is

incompatible with Hsieh's three-dimensional images, unless they are manually created within AppliCad.

Moreover, although Petitioner's motivation to combine is based on an assumption that Hsieh outputs a three-dimensional roof model in a manner that could be used by AppliCad, there is nothing in Hsieh to suggest the SiteCity system described therein, which was a research tool at the Digital Mapping Laboratory at Carnegie Mellon University, is capable of generating such output for other systems to use. *See* Hsieh at 1-2. Indeed, there is no disclosure in Hsieh of outputting models, let alone a model in the ".dxf format" required by the AppliCad system. *See* AppliCad at 4. This is a significant deficiency: the "three-dimensional model" requirement of the claims is one of the key aspects of the invention (*see* '152 patent at claims 1, 12, 16), and Petitioner's inability to identify compatible references on this issue highlights the non-obviousness of the claims. As with the other combinations, Petitioner's omission of reasoning behind its proposed combination is a critical failure and supports denial of institution. *Purdue*, 2016 WL 1161229, at *5; *KSR*, 550 U.S. at 418-19; *Wowza Media*, IPR2013-00054, Paper No. 12, at 15.

The Board's decision in *Smart Modular Techs.* is instructive. There, the petitioner contended a person of skill in the art would have been motivated to combine a prior art patent and a standards document (JTAG) because the patent

disclosed compliance with that standard. IPR2014-01373, Paper No. 16, at 10. The Board, referring to the specific configurations of JTAG in the claimed inventions of the challenged '434 patent, rejected that argument and denied institution. *Id*. at 11. Here, Petitioner has not even identified evidence that Hsieh and AppliCad are compatible, much less "explain[ed] why one of ordinary skill in the art would know" to combine Hsieh and AppliCad to achieve any of the claimed inventions here with "a reasonable expectation of success." *Purdue*, 2016 WL 1161229, at *5.

At best, Petitioner's proposed combination is based on impermissible hindsight. *See id*. at *6. Neither Hsieh nor AppliCad recognizes a problem that would have motivated a person of ordinary skill in the art to modify the references in the manner proposed by the petition. Hsieh does not suggest using a roof estimate report, let alone the specific reports set forth in the claims. Likewise, the portions of AppliCad cited by Petitioner concern the importation of ***two-dimensional*** outlines (*see* Pet. 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. Thus, using the alleged combination of Hsieh with 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). Indeed, one of the inventive aspects of the '152

patent is its use of three-dimensional models generated from aerial images in connection with roof reports. '152 patent at claims 1, 12, 16. Petitioner cannot simply recreate that aspect of the invention by combining an alleged aerial image reference (Hsieh) with a roof report reference (AppliCad), when neither reference includes any suggestion that such an inventive combination would be advisable. *InTouch Techs.*, 751 F.3d at 1351 (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.")

(c) Petitioner Fails to Demonstrate It Would Have Been Obvious To Combine Hsieh With Aerowest (Ground 4)

Petitioner's argument for combining the "network accessibility" functionality of Aerowest with Hsieh (Ground 4) fares no better. *See* Pet. at 35-37 ("[a] person of ordinary skill in the art would have found it obvious to incorporate the network accessibility of Aerowest with the three-dimensional modeling of Hsieh. … Aerowest improves the system of Hsieh by providing additional network accessibility functionality."). But such conclusory statements regarding motivation to combine are routinely rejected by the Board. *Purdue*, 2016 WL 1161229, at *5; *KSR*, 550 U.S. at 418-19; *Wowza Media*, IPR2013-00054, Paper No. 12, at 15.

Moreover, the substance of the references themselves confirms that their combination would not have been obvious. As explained immediately above, Hsieh does not show any way of outputting three-dimensional models. *See* Section VI.B.ii. Therefore, the combination of Hsieh with Aerowest does not result in the claimed invention, and one of ordinary skill in the art would not be motivated to combine them.

(d) Petitioner Fails to Demonstrate It Would Have Been Obvious To Combine Avrahami With Perlant (Ground 6)

Petitioner's "argument" in support of combining Avrahami with Perlant is a cross-reference to its discussion of Ground 2 (combining Perlant with Hsieh). But Petitioner's justification for combining Perlant with Hsieh is insufficient, as those references are incompatible. *See* Section VI.B.ii(a) *supra*. Moreover, Petitioner's conclusory remark asking the Board to import its attempt to justify a ***different*** combination cannot support its combination here. Indeed, a petition for *inter partes* review must contain "[a] ***full*** statement of the reasons for the relief requested, including a detailed explanation of the significance of the evidence," and must identify specifically "[h]ow the construed claim is unpatentable," *TRW Automotive US LLC v. Magna Elecs. Inc.*, IPR2014-00294, Paper No. 21 (Aug. 27, 2014) at 4; *see also Corning Inc. v. DSM IP Assets B.V.*, IPR2013-00049, Paper

No. 8 (May 9, 2014) at 14 ("The Board will not scour the record in search of evidence relevant to a particular issue, nor will it attempt to fit evidence together into a coherent explanation that supports an argument.").

(e) Petitioner Fails to Demonstrate It Would Have Been Obvious To Combine Avrahami With AppliCad (Ground 7)

Petitioner fails to support its combination of Avrahami with AppliCad (Ground 7). Similar to Ground 6, Petitioner's argument improperly attempts to rely on "the same reasons as one would combine Hsieh with Applicad" as a substitute for providing any specific analysis or rationale. *See* Pet. at 53. Such a conclusory approach is improper and should be rejected. *Purdue*, 2016 WL 1161229, at *5; *KSR*, 550 U.S. at 418-19; *Wowza Media*, IPR2013-00054, Paper No. 12, at 15.

Moreover, as with Petitioner's combination of Hsieh and AppliCad, Avrahami and AppliCad are incompatible. AppliCad does not allow for the importation of a three-dimensional model, and thus could not be used with Avrahami as alleged. *See* Section VI.B.ii(b) *supra*. Moreover, as with Hsieh, there is nothing in Avrahami suggesting it is capable of outputting a three-dimensional model for other systems to use. *See* Avrahami at 43-44. To the contrary, Avrahami suggests that its algorithm would require "modification" in

order to even store its data as a three-dimensional model, because "[t]he proposed algorithm focuses more on the extraction of spatial data than on the storage method." *See id.* at 43.

At bottom, Petitioner's omission of reasoning behind its proposed combination is a critical failure and supports denial of institution. *Purdue*, 2016 WL 1161229, at *5; *KSR*, 550 U.S. at 418-19; *Wowza Media*, IPR2013-00054, Paper No. 12, at 15.

(f) Petitioner Fails to Demonstrate It Would Have Been Obvious To Combine Avrahami With Aerowest (Ground 8)

Petitioner's argument in support of combining Avrahami with Aerowest again merely points to a Hsieh combination in place of any actual analysis. For the same reasons as in Section VI.B.ii, Petitioner's failure to provide any rationale for combining these references renders Ground 8 legally insufficient and accordingly it should be rejected.

(g) Hsieh Teaches Away From The Invention And The Proposed Combinations (Grounds 2-4)

As an additional basis to reject Petitioner's proposed combinations involving Hsieh, Hsieh explicitly teaches away from implementing the claimed invention, which provides an independent ground to decline institution. As discussed in

Section II *supra*, all of the challenged claims of the '152 patent require the use of ***at least two*** aerial images to generate a roof estimate report. In its combinations involving Hsieh (Grounds 2-4), Petitioner relies on Hsieh as allegedly supplying this disclosure of multiple images (*see* Pet. at 24-26, 30-31, 35), but Hsieh teaches away from utilizing multiple images.

Specifically, Hsieh discusses three methods that may be used to generate three-dimensional building "hypotheses," which Petitioner relies on to meet the building modelling requirement of the claims. *See, e.g.*, Pet. at 11-16, 24-26, 30-31, 35. Only one of these approaches, however, uses multiple images to generate a "hypothesis," and Hsieh explicitly deters readers from using that approach due to its drawbacks. *See* Hsieh at 19-20. In particular, the first method is called "Single Image Building Detection (SIBD)" which "generates and verifies [3D] building hypotheses using a single image." *Id*. The second method is "External Building Verification (EBV)," which also "generates [3D] building hypotheses using a single image," although it later uses other images to verify the single image. *Id*. Although the third method – named "Multi-Image Roof Matching (MIRM)" – "generates and verifies [3D] building hypotheses using multiple images" (*id.*), Hsieh explicitly instructs those of skill in the art ***not*** to use that method or any

method other than Single Image Building Detection (SIBD), because the other methods are more complex due to the combinatorics[2] involved:

> [O]ur experiments show that both MIRM and EBV are currently slow due to combinatorics, and for reasons of speed, ***only SIBD is currently used within SiteCity***.

Hsieh at 21.

This is a clear case of "teaching away," negating Petitioner's attempt to combine these references. As both the Federal Circuit and the Board have consistently confirmed, a reference teaches away from a claimed invention when a person of ordinary skill, "upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *See, e.g.*, *Allergan, Inc. v. Sandoz Inc.*, 796 F.3d 1293, 1305 (Fed. Cir. 2015); *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999) (same); *BMC Medical Co. Ltd. v. ResMed Ltd.*, IPR2013-01363, Paper No. 25 (Jan. 20, 2016) at 19 (same). Here, even if the

[2] Combinatorics is the branch of mathematics studying the enumeration, combination, and permutation of sets of elements and the mathematical relations that characterize their properties. *See* Ex. 2001 (Weisstein, Eric W. "Combinatorics." From MathWorld - A Wolfram Web Resource. http://mathworld.wolfram.com/Combinatorics.html).

Board finds that there is disclosure in Hsieh of using multiple images to generate a three-dimensional roof model, and that one of skill in the art would be motivated to combine Hsieh with AppliCad, Perlant, or Aerowest, Hsieh's teaching away from use of multiple images would invariably cause one of skill in the art to use the single-image approach in combining Hsieh with those other references, ***not*** the multi-image approach. Indeed, Hsieh performed experiments on the single and multi-image approaches and explicitly concludes that using any approach other than single-image would be slow and inefficient. *See* Hsieh at 21. As such, one of ordinary skill in the art is instructed to not even try that approach, as it has already been vetted by Hsieh and rejected. *See, e.g.*, *Allergan, Inc.*, 796 F.3d at 1305; *Dr. Reddy's Labs., Inc. v. Pozen Inc.*, IPR2015–00802, Paper No. 28 (Oct. 9, 2015) at 25-26.

(h) Petitioner's Conclusory Expert Testimony Should Be Rejected

Petitioner's reliance on the declaration of Harold Schuch adds nothing to Petitioner's conclusory motivation to combine arguments. Schuch "essentially repeats the arguments advanced by Petitioner in its Petition" (*compare* Pet. at 29 *with* Ex. 1007 ¶¶ 55-58) and as such, offers no persuasive evidence supporting the combination. *See Qualcomm Inc. v. ParkerVision,* IPR2015-01819, Paper No. 8 (Mar. 8, 2016) at 29 (finding expert testimony that "essentially repeats the

arguments advanced by [Petitioner]" unpersuasive). As in *Qualcomm*, the Board should disregard Schuch's declaration here. *See id*.

(i) Petitioner's Boilerplate Assertions Regarding Motivation To Combine Also Should Be Rejected

In addition to its generalized, conclusory statements concerning combinations discussed above, Petitioner also makes a number of boilerplate assertions listing MPEP sections after its claim charts which Petitioner contends support the proposed combination. *See* Pet. at 26-28, 31-33, and 35-37. Almost without exception, these arguments are not supported by any citation to the references themselves, or expert testimony, and in each case merely repeat the same conclusory grounds discussed above without providing any additional rationale for combining the references. These arguments should be rejected.

As this Board has consistently found, boilerplate assertions such as these that lack evidence or explanation are insufficient to establish obviousness. For example, in *Stryker v. Karl Storz Endoscopy*, IPR2015-00672, Paper No. 9, at 13, the Board rejected an unsupported and unexplained claim that "the combination of Endsley and Adler for use in an endoscope would have involved merely combining known elements according to known methods to yield predictable results or the simple substitution of one known element for another to obtain predictable results," because the petitioner did not explain why "one of ordinary skill in the art

relating to endoscopic cameras would look to a camera such as Endsley, which is suitable for videoconferencing."

Petitioner's arguments here suffer from the same fatal defect. Specifically, Petitioner's additional paragraphs following its claim charts merely state, without analysis, that the references could be combined, including by using "known techniques." *See, e.g.*, Pet. at 27 ("person of ordinary skill in the art would have found it obvious to incorporate the registration functionality of Perlant into the three-dimensional modeling of Hsieh as doing so would be using known techniques to improve similar devices in the same way."); *id*. at 32, 37. That Petitioner's assertions incorporate legal standards verbatim from the MPEP is irrelevant, and is certainly no substitute for the explicit "reasoning" based on the facts, as required by the cases. *Stryker*, IPR2015-00672, Paper No. 9, at 7.

As another example, Petitioner regularly refers to "predictable results" as a basis for its alleged obviousness combination. *See, e.g.*, Pet. at 26-27 ("a person of ordinary skill in the art would have found it obvious to incorporate the registration functionality of Perlant with the three-dimensional modeling of Hsieh as doing so would be combining prior art elements according to known methods to yield predictable results."); *id*. at 31 (same argument for AppliCad and Hsieh); *id*. at 36 (same argument for Aerowest and Hsieh). Once again, Petitioner merely parrots the standards from the MPEP.

The Petition fails to make the required showing to support a finding of obviousness. Indeed, "[a]lthough predictability is a touchstone of obviousness, the 'predictable result' discussed in *KSR* refers not only to the expectation that prior art elements are capable of being physically combined, but also that the combination would have worked for its intended purpose." *DePuy Spine, Inc. v. Medtronic Sofamor Danek*, Inc., 567 F.3d 1314, 1326 (Fed. Cir. 2009) (citing *KSR*, 550 U.S. at 398). And as the Board held in *Stryker*, this argument fails where, as here, the "Petitioner has not explained sufficiently why, or identified evidence that shows, the invention described in the [challenged patent] falls into a very predictable field, or that one of ordinary skill in the art would have possessed the requisite skills to make the proposed combination, or that one of ordinary skill in the art would have anticipated reasonably the combination to function in an ordinary and expected way." *Stryker*, IPR2015-00672, Paper No. 9, at 14 (citing *Rothman v. Target Corp.*, 556 F.3d 1310, 1319-20 (Fed. Cir. 2009) and *Unigene Labs.*, 655 F.3d at 1360).

C. Ground 1: Hsieh Does Not Anticipate Any Of The Challenged Claims

i. Hsieh Does Not Disclose "generat[ing] a roof estimate report" (Claims 1, 12, 16, 25)

Petitioner treats the preambles of independent claims 1, 12, and 16 as limitations, and identifies general statements regarding "three dimensional building models" of Hsieh as purportedly meeting the "generat[ing] a roof estimate report" aspects thereof, as well as the similar limitation of claim 25. *See* Pet. at 11-12, 18, 21, 23. But as detailed in Section III.B.ii above, the claimed "roof estimate report" is separate and distinct from the roof model. Hsieh does not disclose any reporting functionality, and indeed, Petitioner merely contends that "[t]he system of Hsieh generates a roof estimate report ***in the form of a model*** having measurements of a building roof." Pet. at 10. Petitioner's expert further confirms that in order for Hsieh to generate a roof estimate report, "one of ordinary skill in the art" would need "to modify the output of Hsieh," *i.e.*, there is no disclosure of a roof estimate report without modification. *See* Ex. 1007 at ¶ 47 (asserting that "it was well within the knowledge of one of ordinary skill in the art to generate a roof estimate report using the models generated by Hsieh" but failing to point to any disclosure of roof report generation in Hsieh). This is not anticipation. *See Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) ("[U]nless a reference

discloses within the four corners of the document not only all of the limitations claimed but also ***all of the limitations arranged or combined in the same way as recited in the claim***, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102.").

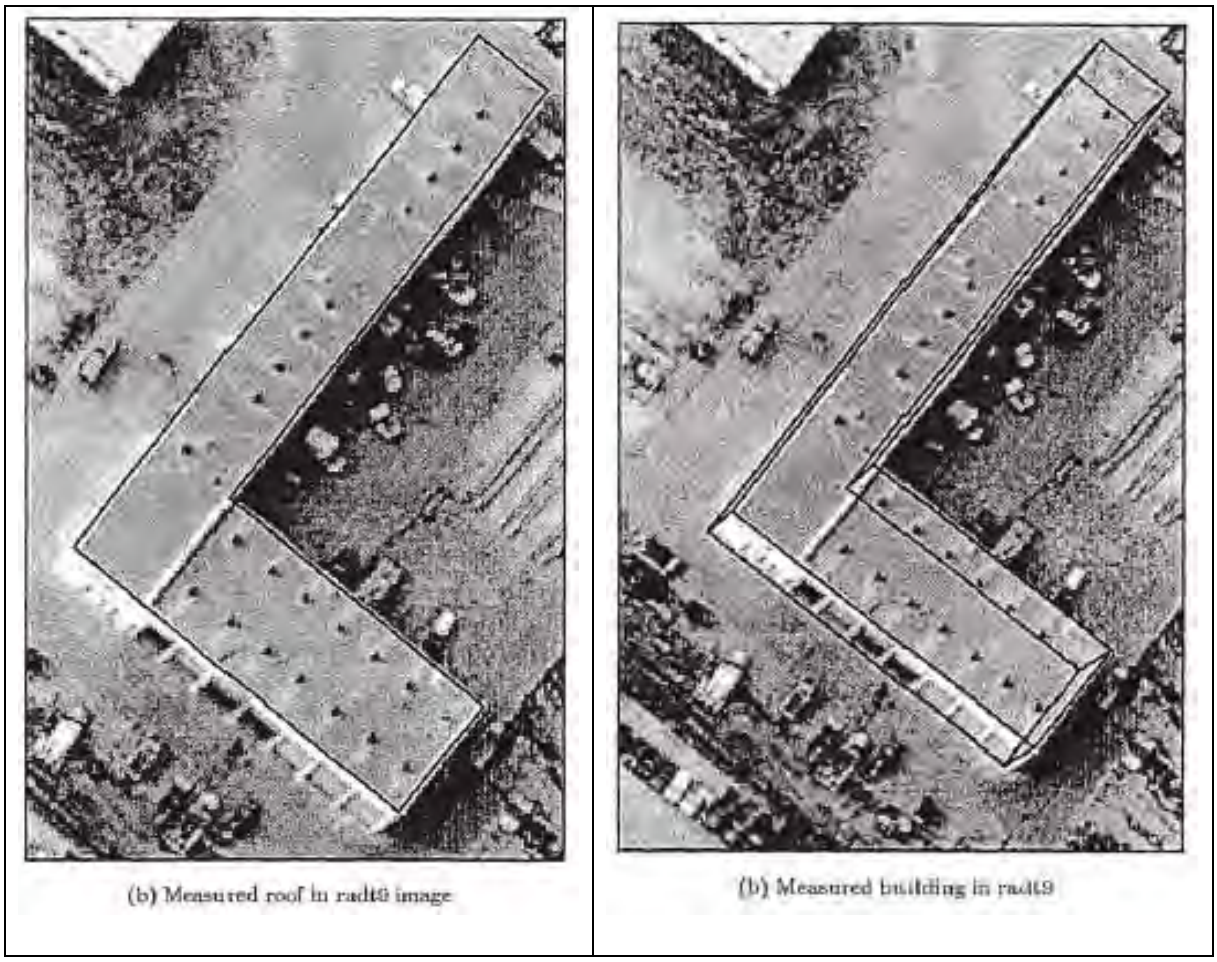
Notably, Petitioner does not argue that Hsieh discloses the generation of a roof estimate report in multiple parallel Petitions before the Board, for claims similarly requiring the generation of a "roof estimate report." *See, e.g.*, IPR2016-00586 at Paper No. 10; IPR2016-00587 at Paper No. 9. Because each challenged independent claim requires the generation of a "roof estimate report," and because Hsieh does not disclose this feature, all of Petitioner's anticipation arguments must be denied.

ii. Hsieh Does Not Disclose "display[ing] a projection of the feature from the modified three-dimensional model onto the first and second aerial images as a line drawing of the feature, each overlaid on corresponding locations of the feature on the first and second aerial images" (Claims 1 and 12) Or "in response to the receiving of the indication of the feature of the building, displaying a projection of the feature from the modified three-dimensional model onto a second aerial image that provides a second view of the roof of the building as a line drawing of the feature, each overlaid on corresponding locations of the feature on the first and second aerial images" (Claim 16)

Hsieh does not disclose these limitations, which appear in challenged independent claims 1, 12, and 16 respectively. Each of these claims is directed to "generat[ing] a roof estimate report" using two different aerial images of a roof, *i.e.*, the "first aerial image" and the "second aerial image." '152 patent at claims 1, 12, 16. A key aspect of the claims is allowing a user to change features on the first image which then causes the computer system to make corresponding changes in the second image. *See id.* This computer-driven change to the second image is captured in the above claim elements. *See id.* This is an important aspect of the patented roof estimation system: according to the specification, "the operator can switch between various images of the building roof 407, making refinements to the

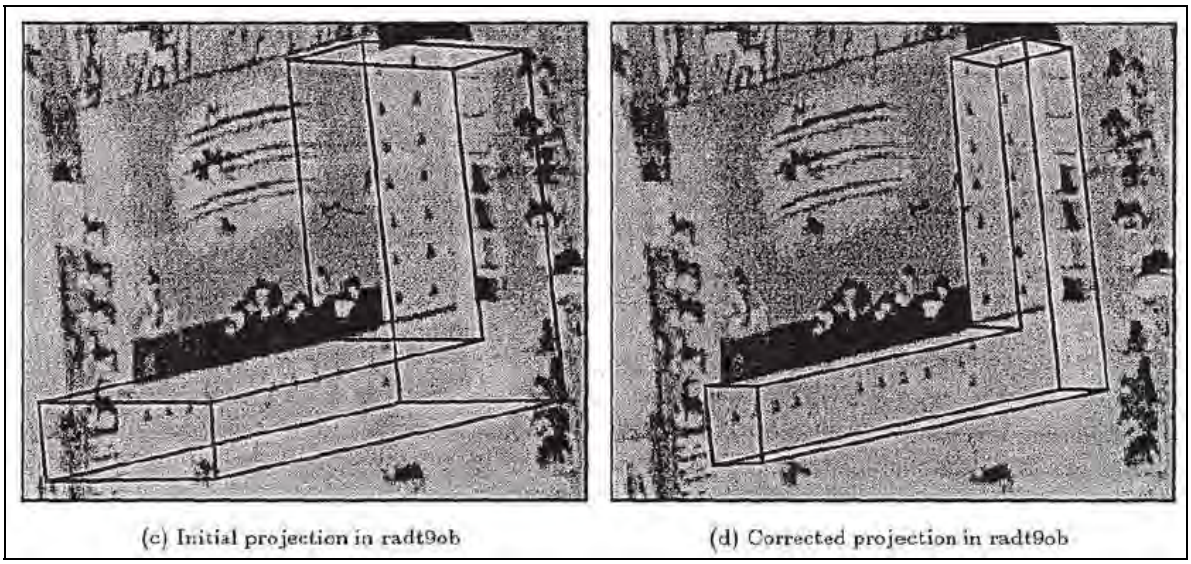
3D model by adjusting the wire frame in whichever image is more convenient and/or provides a more suitable perspective/view of the model." *See* '152 patent at 14:57-61. Hsieh, however, does not disclose this functionality; to the contrary, when features are identified in a first image in Hsieh, a user is responsible for manually identifying those features in corresponding locations in a second image. This is the opposite of the claimed functionality, and fails to provide one of the key benefits of the invention, as discussed in the specification. *See id.* at 14:57-61.

Specifically, Hsieh's algorithm for generating a 3D model from an image of a roof begins with a user "manually measur[ing] the roof and floor of a building in a first image. *See* Hsieh at 6 ("The first task … is to manually measure the roof of a building in an image. … [T]he next task is to measure the floor position.") These roof and floor measurements are illustrated with the black lines drawn over the images in Figs. 3(b) (roof lines) and 4(b) (floor lines and roof lines):



Hsieh at Figs. 3(b) and 4(b). After the roof and floor measurements are made in the first image, Hsieh does not describe a step where those measurements are "overlaid on ***corresponding locations of the feature*** on the … second aerial image[]." as required by the claims. *See, e.g.*, '152 patent at claim 16. Rather, as confirmed by Hsieh, a user must manually place the measurements on corresponding locations in the alleged second image, in a process referred to as "Correct Building Location In Other Images." *See, e.g.,* Hsieh at 7 ("When an object is projected from one image to the next, the projected buildings usually do

not agree with the image due to inaccuracies in the … camera parameters"); ("The final task is to correct the location of the building in other images."). This "correction" process is not an option – according to Hsieh, "[t]his step is essential for achieving accurate 3D building models." *Id.* This process is illustrated in the corresponding figures, which show how a user must manually align the measurements in the second image such that it is in the corresponding locations:



Hsieh at Figs. 4(c) and 4(d). Thus, the placement of the projection on the "corresponding locations" is not in response to the received indication of a feature on the first image as required but rather the result of a user-driven correction. With respect to claim 16, the user-driven correction is indisputably not "in response to the receiving of the indication of the feature ***[in the first aerial image]."*** *See* '152

patent at claim 16. Similarly, claims 1 and 12 require that the ***modified three-dimensional model*** – which is based on the received indication of a feature ***in the first image*** – be projected onto corresponding locations on the second image. The user-driven manual correction of ***the second image*** does not qualify, as it is not driven by a modification to the alleged model, let alone a modification to the first image.[3]

[3] Independent claims 1 and 12 require "display[ing] a projection of the feature from the modified three-dimensional model onto the first and second aerial images as a line drawing of the feature, each overlaid on corresponding locations of the feature on the first and second aerial images." *See* '152 patent at claims 1, 12. Like claim 16, both of these claims require "receiv[ing] an indication of a feature of the building shown ***in the first aerial image***." *See id*. In response, there is "modif[ication] [of] a three-dimensional model of the roof based on the received indication of the feature of the building." *See id*. Accordingly, like claim 16, claims 1 and 12 require that the claimed overlay on the second aerial image be driven by the modification to the three-dimensional model as a result of an indication of a feature on a first image. Hsieh does not disclose these claim elements.

None of Petitioner's citations to Hsieh describe a projection from one image to corresponding locations on another image, and indeed one does not exist because that functionality is expressly missing from Hsieh. *See* Pet. at 15-16 (citing Hsieh at 6, 10, 13, 29, Fig. 17). In reality, Hsieh strongly teaches away from such an automated approach, by proposing a "semi-automatic" approach that requires user intervention. *See, e.g.*, Hsieh at 1 (advocating a "semi-automatic" approach where "users correct mistakes in [the] site model."); *Allergan, Inc. v. Sandoz Inc.*, 796 F.3d 1293, 1305 (Fed. Cir. 2015) ("[a] reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant."); *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999) (same); *BMC Medical Co. Ltd. v. ResMed Ltd.*, IPR2013-01363, Paper No. 25 (Jan. 20, 2016) at 19 (same).

iii. Hsieh Does Not Disclose "transmitting roof measurement information based at least in part on the modified three-dimensional model" (Claims 9, 12)

According to the '152 patent, the patented system transmits roof measurement information to "third-party systems that generate roof estimate reports based on the provided information." *See* '152 patent at 17:24-33; 7:13-16

("[r]eports may be transmitted electronically, such as via a network (e.g., as an email, Web page, etc.) or by some shipping mechanism, such as the postal service, a courier service, etc.").

Hsieh does not disclose "transmitting" any roof measurement information out of the Hsieh system, let alone roof measurement information that is based on a modified three-dimensional model as required. Indeed, Hsieh provides ***no*** disclosure of outputting anything from the system – it simply creates the alleged model and the process is concluded. *See, e.g.* Hsieh at 1-2.

Faced with these facts, Petitioner suggests that in Hsieh, roof measurement information is transmitted "within the various components of the system" (Pet. at 17) and references generalized discussions from Hsieh to support this claim. Petitioner's contention on this point is insufficient for at least two reasons. First, merely transmitting roof measurement information "within the various components of the system" does not satisfy the claimed "transmitting" requirement. As discussed above, the claimed "transmitting" elements require transmission of roof measurement information ***out*** of the system, not within. *See* '152 patent at 17:24-33; 7:13-16.

Petitioner does not dispute these facts. And while transmitting measurements "within" the system is therefore irrelevant, Petitioner's citations to Hsieh on that point do not show that type of "transmitting" either. The first

parenthetical on page 17 (beginning with "Three-dimensional building hypotheses are generated by triangulating building hypotheses …") comes from page 20 of Hsieh, under the heading "Multi-Image Roof Matching (MIRM)." This passage, however, says nothing about the transmission of roof information, let alone information based at least in part on a modified model, as required. Moreover, Hsieh expressly teaches away from using the techniques described in that section, stating that "MIRM and EBV are currently slow due to combinatorics, and for reasons of speed, only [Single Image Building Detection] is currently used within SiteCity." Hsieh at 21. Likewise, the second parenthetical on page 17 of the petition (from page 71 of Hsieh) pertains to a general discussion of "integrate image understanding algorithms into an interactive system for extracting three dimensional building models using multiple images." Pet. at 17. Transmission of roof measurement information is simply not discussed.[4]

[4] Petitioner's citation includes a generic cite to 10 pages of Hsieh, *see* Pet. at 17 (citing "Hsieh, pp. 19-28") but only excerpts one parenthetical from this long span of pages. In any event, those pages likewise do not disclose the "transmission of roof information based at least in part on the modified model." Moreover, as Petitioner did not point the board to any particular disclosure on

Lastly, claims 9 and 12 require the transmitted roof measurement information to be "based at least on the ***modified*** three-dimensional model." Petitioner does not explain how this portion of the claim is met and indeed, it cannot do so, as discussed above. At bottom, Petitioner does little more than quote unrelated passages from Hsieh in its claim chart and accordingly its argument here should be rejected. *See TRW Auto.*, IPR2014-00294, Paper No. 21, at 4; *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992).

iv. Hsieh Does Not Disclose "displaying a marker operable to specify a point on an image; receiving, via the marker, an indication of a point on the first aerial image; and registering, based on the received indication of the point, the aerial image to a reference grid corresponding to the three-dimensional model" (Claim 10)

Petitioner relies on, without any further explanation, Hsieh's disclosure of "epipolar matching of the roof on other images and generat[ing] a set of roof hypotheses in each of the images" and "triangulating building hypotheses" in order to satisfy claim 10. *See* Pet. at 18 (citing Hsieh at 20). But claim 10 recites a specific set of steps by which an aerial image can be registered to a reference grid,

---

those pages, they should be disregarded. *Corning Inc.*, IPR2013-00049, Paper No. 8, at 14.

described in detail in the specification (*see generally* '152 patent at 9:27-12:15), and none of Petitioner's relied upon support comes close to meeting this claim.

Those steps require a registration marker, and certain actions the user takes based on that marker to register the images to a reference grid. Petitioner fails to identify any of these specifically claimed steps and items in Hsieh. First, Petitioner fails to identify a "marker operable to specify a point on the image." *See* Pet. at 18. Because Petitioner has not identified such a marker in Hsieh, the steps of "receiving, via the marker, an indication of a point," and "registering, based on the received indication of the point," cannot be met. *See id*. Moreover, Petitioner does not explain how its cited support discloses "registering, based on the received indication of the point, the aerial image to a reference grid corresponding to the three-dimensional model," nor can Petitioner identify the claimed "reference grid," let alone mention a "data structure to which one or more images are registered," to use Petitioner's own proposed claim construction. *Id*. Indeed, Petitioner does little more than quote unrelated passages from Hsieh in its claim chart, which are irrelevant to the claim requirements, and accordingly its argument here should be rejected. *See TRW Auto.*, IPR2014-00294, Paper No. 21, at 4; *In re Fritch*, 972 F.2d at 1266.

v. Hsieh Does Not Disclose "the roof estimation module is part of a network accessible roof modeling program executing on the computer system" (Claim 15)

Petitioner's support for this element consists of several references to images that are "distributed under the RADIUS program," but points to no evidence that those images, or the RADIUS program itself, were used in Hsieh as part of a "network accessible roof modeling program." *See* Pet. at 10-12, 20-21 (citing Hsieh at 31 ("This scene is part of the Ford Hood aerial images **distributed** under the RADIUS program) (emphasis added by Petitioner), 53 ("Figure 33(a) shows the image jl for the model board scene, distributed under the RADIUS program"), 57 ("Figure 33(c) shows the image 740v for a complex building in the Martin Marietta image set (mmbld), also distributed under the RADIUS program.")). The mere usage of the word "distributed" does not establish that the images Petitioner relies on are are part of the claimed "network accessible roof modeling program." At most, Petitioner's citations provide a reference to where images were previously obtained from for use with Hsieh. This does not establish any sort of network accessibility. Petitioner further relies on its expert, Dr. Schuch, for the proposition that the RADIUS program "was a central aerial image database," but the only support Dr. Schuch provides for that statement is the Hsieh reference itself. *See* Pet. at 11 (citing Ex. 1007 at ¶ 49 ("Hsieh obtains its aerial images from a

RADIUS program which was a central aerial image database. *See, e.g.*, Hsieh, p. 31.")). The "Fort Hood aerial images" Hsieh uses for its examples appear to be just one small subset of images from the RADIUS program, but neither Hsieh nor Petitioner provide any indication or support that they were accessed through a network accessible roof modeling program. And neither Petitioner nor Petitioner's expert, Dr. Schuch, actually connects any disclosure from Hsieh to the claim requirement that there be a "network accessible roof modeling program," rendering Petitioner's support inapposite. At bottom, Hsieh lacks any disclosure of network accessibility, and therefore it cannot anticipate this claim.

D. Ground 2: The Combination Of Hsieh And Perlant Does Not Render Claim 10 Obvious

Contrary to Petitioner's assertions, neither Hsieh nor Perlant discloses what is claimed in claim 10. As an initial matter, the combination of Hsieh and Perlant does not render obvious claim 1 from which this claim depends (*see* Sections VI.C.i-ii *supra*), and accordingly, the combination cannot render obvious this claim. *See In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988) ("Dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious."). As discussed in Sections VI.C.i-ii, Hsieh does not disclose numerous elements of claim 1, and Petitioner does not contend that Perlant meets any limitations of claim 1.

As discussed in Section VI.C.iv, Hsieh does not disclose "a reference grid corresponding to the three-dimensional model," as required by claim 10. *See* Section VI.C.iv *supra*. Attempting to remedy this deficiency, Petitioner argues that Perlant discloses this claim limitation. This is incorrect for at least two reasons.

First, while Perlant discusses scene registration, it does not disclose registering a first aerial image in connection with a ***three-dimensional model of a roof*** as is explicitly required by claim 10**.** To the contrary, Perlant's discussion of "registration" concerns the generation of "disparity maps" which show the relative heights between buildings in the images – ***not*** a three-dimensional model of any particular roof. For example, Figure 8(b) of Perlant is meant to provide a "disparity map" of relative height of buildings in an aerial image of Figure 8(a):

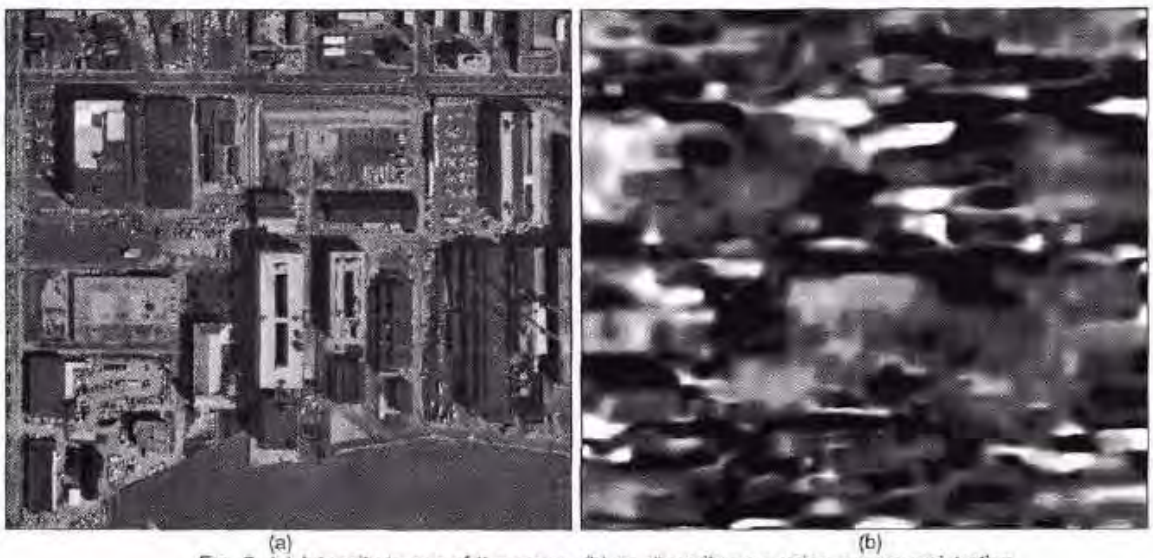
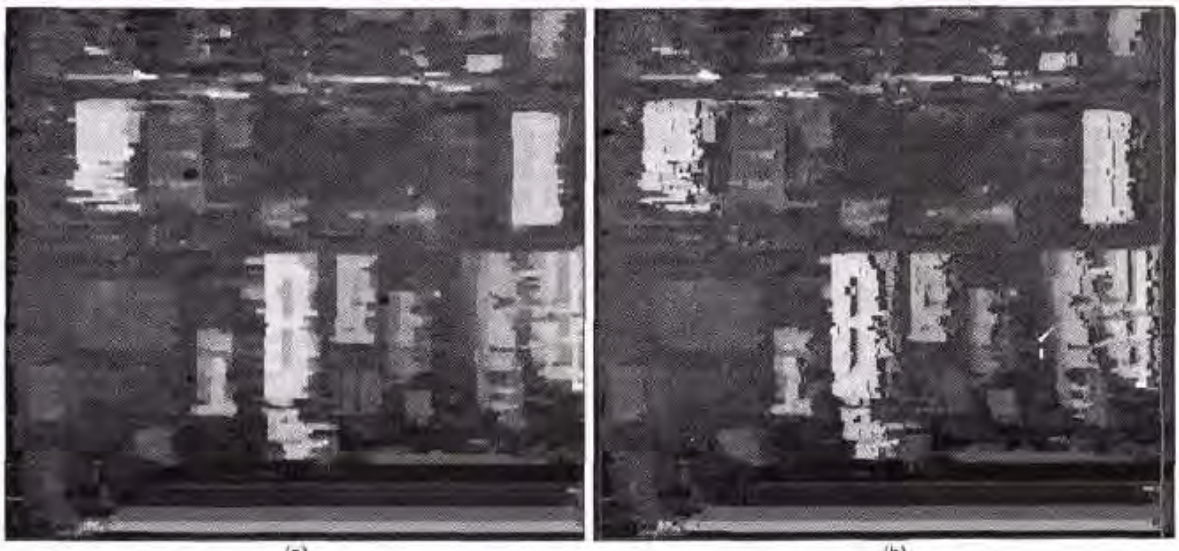


FIG. 8. (a) Intensity image of the scene. (b) S1 disparity map using coarse registration.

Figure 8(b) is described as three-dimensional because "brighter regions are closer to the camera and have greater height [while] [d]arker regions are at or below the relative terrain ground plane" (Perlant at 489), but Figure 8(b) does not provide a three-dimensional ***model of a roof*** as is required. '152 patent at claims 1 (reciting "modifying ***a three-dimensional model of the roof*** "); 10 ("registering, based on the received indication of the point, the aerial image to a reference grid corresponding to ***the three-dimensional model***"). Indeed, Figure 8(b) provides no guidance as to the modeling of any individual roof – as Perlant states, "[w]e can barely discern the general shape of the taller buildings in the middle and the upper left areas of the scene." Perlant at 489.

The remainder of the examples in Perlant likewise do not disclose a three-dimensional model of a roof. *Id*. at 489-90; Fig. 9 (depicting another disparity map whose roofs are "barely discernible"). Likewise, while Figure 10 depicts a method of "visualiz[ing] … a three-dimensional scene" (*id.* at 490), that once again merely refers to the same disparity map techniques, ***not*** a model of any roof. *Id*. at 490-91; Fig. 11.



(a) (b)

FIG. 10. (a) S2 stereo matching result (left). (b) S2 stereo matching result (right).

Figure 11 is more of the same – although Perlant describes Figure 11 as showing "a simple three-dimensional ground truth segmentation that can be visualized as a stereo scene" (*id*. at 490; Fig. 11), that figure merely shows the relative heights of buildings in the images through their brightness or darkness, ***not*** a roof model. *Id.* at 491.

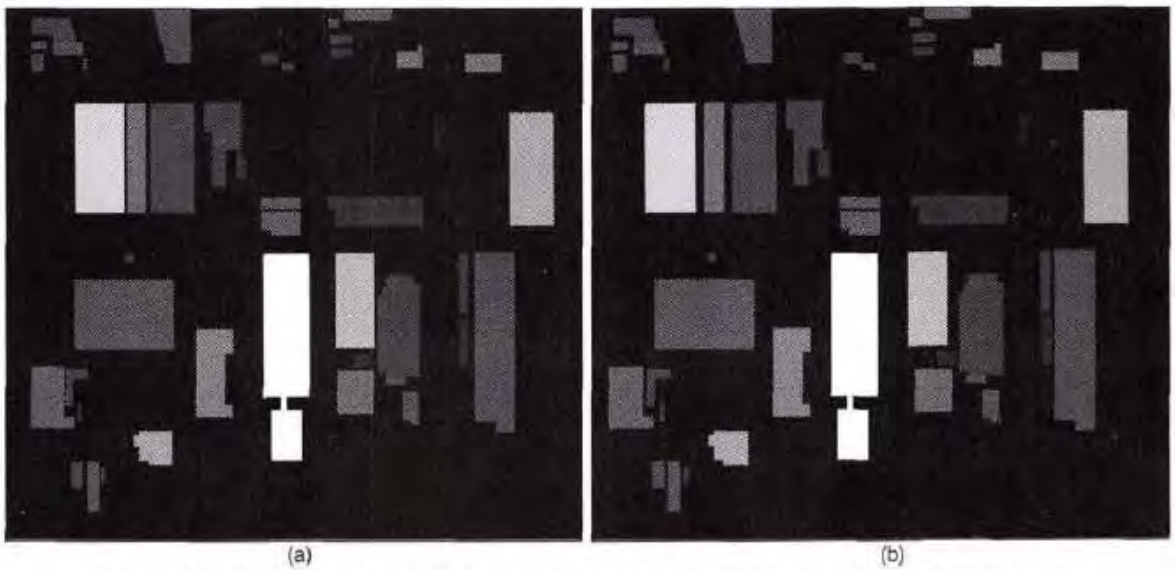


FIG. 11. (a) Ground truth left image for DC38008 scene. (b) Ground truth right image for DC38008 scene.

Petitioner's reliance on Perlant's "three-dimensional visualizations" and "three dimensional images" for this element are misplaced. Pet. at 24-26. Merely using the phrase "three-dimensional" is not enough. Perlant never once uses its registration process to provide a roof model, let alone a three-dimensional one. This is a critical omission – the patents are directed to roof estimation, which cannot be accomplished using Perlant's disparity maps.

Second, Perlant does not disclose a "reference grid" as required by claim 10. Petitioner relies on the gridlines in Figure 4, claiming that figure "shows the results of the fine registration in a reference grid using selected shadow points." Pet. at 25. The gridlines in Figure 4, however, are added ***after*** images are registered, to identify potential misregistrations. *See* Perlant at 482 ("We have superimposed a set of gridlines on both images in order to make it easier to see the actual

misregistration."). By contrast, claim 10 requires the aerial images to be ***registered to an existing reference grid***, ***not*** identify misregistrations using a grid that is only added after registration. *Compare, e.g.,* '152 patent at claim 10 *with* Perlant at 482.

E. Ground 3: The Combination of Hsieh And AppliCad Does Not Render Claim 25 Obvious

Petitioner relies solely on AppliCad for this limitation. *See* Pet. at 30-31. First, the combination of Hsieh and AppliCad cannot render obvious this claim because that combination does not render obvious claim 16 from which claim 25 depends. *See* Sections VI.C.i-ii *supra*; *In re Fine*, 837 F.2d at 1076. Hsieh does not disclose numerous elements of claim 16, and Petitioner does not contend that AppliCad meets any limitations of claim 16. Moreover, as discussed in Section VI.B.ii(b), AppliCad is unable to import a three-dimensional model from Hsieh – one of the numerous reasons why a person of skill in the art would not combine Hsieh with AppliCad – and therefore any report AppliCad would generate could not be "based … on the modified three-dimensional model."

F. Ground 4: The Combination Of Hsieh And Aerowest Does Not Render Claim 15 Obvious

The combination of Hsieh and Aerowest cannot render obvious this claim because that combination does not render obvious claim 12 from which claim 15 depends. *See* Sections VI.C.i-ii *supra*; *see In re Fine*, 837 F.2d at 1076.

Moreover, as discussed in Section VI.B.ii, Hsieh does not export a three-dimensional model, which is required under Petitioner's argument. *See* Pet. at 35-37.

G. Ground 5: Avrahami Does Not Anticipate Any Of The Challenged Claims

i. Avrahami Does Not Disclose "generat[ing] a roof estimate report" (Claims 1, 12, 16, 25)

Petitioner treats the preambles of independent claims 1, 12, and 16 as limiting and identifies general statements regarding a "model[] on a coordinate graph or plane" as purportedly meeting the "generat[ing] a roof estimate report" aspects thereof, as well as the similar limitation of claim 25. *See* Pet. at 41, 47, 50. Petitioner further alleges that "Avrahami discloses a system which creates a report of the roof dimensions" and "discloses a system which transmits roof measurement information." Pet. at 40. But Petitioner's own arguments confirm that neither of these alleged capabilities is present in Avrahami, as Petitioner concedes that material modification and supplementation to the reference is required in order to generate the claimed roof estimate report. For example, Petitioner argues that "the local coordinate system ***can easily be converted*** to actual measurements given the parameters of the camera in which the aerial images were taken," to argue that it discloses "a report of the roof dimensions" and "transmit[ting] roof measurement

information." Pet. at 40. But Avrahami does not contemplate such a conversion, explain how such a conversion would be done, nor discuss why one would be required to accomplish the goals of the reference, *i.e.*, developing algorithms, let alone what would make such a conversion purportedly "easy." Furthermore, Petitioner fails to identify any "reporting" functionality, as is required by the claims.

Petitioner provides no expert testimony to support its bare attorney argument. In fact, Petitioner's expert confirms that Avrahami does not disclose a "roof estimate report," but rather, "Avrahami generates a digital model." *See* Pet. at 53 (citing Ex. 1007 at ¶ 65). But the claimed "roof estimate report" is separate and distinct from the roof model. *See* Section III.B.ii *supra*. Dr. Schuch states that a report "could easily be exported for use in another program to generate a roof estimate report," but conspicuously omits any reference to such capabilities in Avrahami and, like Petitioner, fails to explain what would make such a process purportedly "easy." *See* Ex. 1007 at ¶ 65. This is not anticipation under § 102 as a matter of law for any claims reciting a "roof estimate report." *See Net MoneyIN*, 545 F.3d at 1371; *Liberty Ammunition*, 119 Fed. Cl. at 387.

ii. Avrahami Does Not Disclose "modify[ing] a three-dimensional model of the roof based on the received indication of the feature of the building" (Claims 1, 12, 16)

Avrahami does not disclose "modifying" any alleged roof models based on a received indication of a feature of the building as required by claims 1, 12, and 16. Rather, the entirety of Avrahami is directed to the generation of an original alleged roof model based on the identification of "seed points" corresponding to roof planes on a roof. Avrahami at 46-48. There is no disclosure of modifying that model based on subsequent indications of features. Although Avrahami discloses an automated process for creating polygons relating to the roof planes through an iterative matching process, those iterations are all part of the generation of original alleged roof models based on the same alleged "indications of a feature of the building."

Avrahami begins by describing a semi-automatic algorithm for building a 3D model from "a pair of colored aerial images," which Avrahami refers to as "left" and "right" images. *See* Avrahami at Abstract. "The algorithm consists of several consecutive stages" – which are reflected in Figure 2 and the corresponding text. Nowhere does Avrahami allow for a modification to a roof model, let alone a modification based on an indication of a feature on a first image. Specifically, in the first stage, "the operator needs to point at every distinct planar part of the roof

in the left image." *Id.*; *see also id.* at 44, 46. These points are called "seed points." *See id.* Next there is a "transfer [of] the first seed point[s] to the homologous point ***in the right image***." *See id.* at 45. Although Avrahami discusses an "iterative matching process" to overcome "occlusions" in the left or right images (*id.* at 44), that is part of the overall process for generating the original alleged model. *See id.* At no point other than at the beginning of the process can the system receive an indication of a feature which causes the ***modification*** of the model.

Petitioner's citations to Avrahami confirm these points. Indeed, Petitioner's citations explicitly state that the process includes "three main stages" from which "the outcome is a 3D roof." Pet. at 43. Although Petitioner states that Figure 2 shows "that for each received indication 1 through n, the process continually reconstructs the 3D roof plane based on each received indication" (*id.*), that at best refers to the "iterative matching process" in the construction of the original alleged model. Avrahami at 44. Petitioner identifies no disclosure of modifying a model based on the receipt of an indication of a feature, as required.

The "modifying" requirement is important and is closely intertwined with the other elements of the claims. For instance, the claims require "displaying a projection of the feature from the modified three-dimensional model" onto the first and second aerial images. '152 patent at claims 1, 12, 16. In Avrahami, however,

there is no modified model to display, let alone a feature which produced a modified model. To the contrary, in Avrahami, the alleged modeling process ***merges*** features identified on first and second images in a manner that ***deletes roof planes selected by a user***. Avrahami at 46. This is directly contrary to claimed functionality, and fails to provide one of the key benefits of the invention, as discussed in the specification. *See* '152 patent at 14:57-61 ("the operator can switch between various images of the building roof 407, making refinements to the 3D model by adjusting the wire frame in whichever image is more convenient and/or provides a more suitable perspective/view of the model.").

iii. Avrahami Does Not Disclose "transmitting roof measurement information based at least in part on the modified three-dimensional model" (Claim 9)

Petitioner identifies the general discussion of "CAD and GIS systems" in the introduction of Avrahami as purportedly meeting the "transmitting roof measurement information" aspects of claim 9. *See* Pet. at 46. But Avrahami is not directed to those systems, but rather to "algorithms for semi-automatic 3D spatial polygon extraction from a pair of colored aerial images with a known external model solution." Avrahami at 43. Petitioner fails to identify any information that is actually transmitted, or any disclosure in Avrahami that its proposed algorithm may be implemented in such a system. Indeed, the only "system" to run

Avrahami's algorithm is the MATLAB® program designed to quality test the algorithm for efficiency purposes, not for any sort of exportation or transmission of the roof information. *See* Avrahami at 46 (describing "using the MATLAB® environment, in order to examine the algorithm efficiency"). Instead, Petitioner does little more than quote unrelated passages from Avrahami in its claim chart, which are irrelevant to the claim requirements, and accordingly its argument here should be rejected. *See TRW Auto.*, IPR2014-00294, Paper No. 21, at 4; *In re Fritch*, 972 F.2d at 1266.

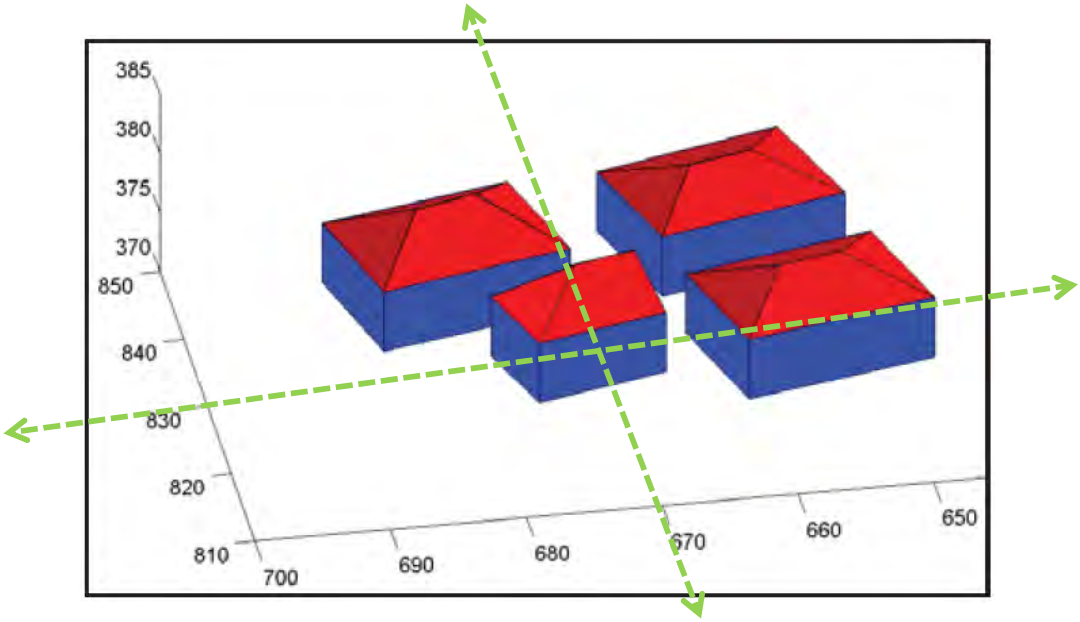
Petitioner further asserts that "Avrahami also discloses transmitting roof measurement information on a coordinate graph or plane." *See* Pet. at 46 (citing Avrahami at 46). But Petitioner again fails to explain how extracting a 3D roof in a local coordinate system for viewing is a transmission of "roof measurement information." Further, as discussed above in Section VI.G.i, Petitioner's prior statements make clear that the output of Avrahami would require a "conver[sion] to actual measurements" (Pet. at 40) to meet the limitation, dooming its anticipation argument here.

iv. Avrahami Does Not Disclose "displaying a marker operable to specify a point on an image; receiving, via the marker, an indication of a point on the first aerial image; and registering, based on the received indication of the point, the aerial image to a reference grid corresponding to the three-dimensional model" (Claim 10)

As with its arguments based on Hsieh in Section VI.C.iv, Petitioner fails to identify numerous elements of this claim, including "a marker operable to specify a point on an image," "registering … the aerial image to a reference grid," as well as an actual "reference grid" in Avrahami. Petitioner relies on Avrahami's recitation of manually selecting "seed points (in 2D) to the centre area … of each roof plane." But those points in Avrahami are not operable in the the same way as the "Marker 410" discussed in Section III.B.i, but rather serve to extract a bounded polygon of the planar roof section, one section at a time. *See* Avrahami at 46. The seed points of Avrahami do not lead to "receiving … an indication of a point" and using that indication to "register[] … the aerial image to a reference grid," and Petitioner fails to offer any explanation suggesting otherwise.

Petitioner then attempts to combine Figures 5 and 6 as support for the claimed registration process. But the images in Figure 5 are nowhere to be found in Figure 6, and Petitioner does not identify anywhere in Avrahami where an aerial image is registered to a reference grid. Nor does Petitioner explain how the seed

points in Figure 5 play any part in registering the aerial image. Moreover, Petitioner's citation to Figure 6 as allegedly demonstrating "correspondence between the aerial images and the three dimensional models" (Pet. at 47) lacks any support in the reference. Indeed, Figure 6 shows four roof depictions that do not appear connected to any aerial image, and as shown by the added dotted lines, are not even aligned – let alone registered – to the provided axes:



Avrahami at Fig. 6. Petitioner provides no explanation of what units the axes depict, nor what each axis relates to, and in fact concedes that Figure 6 does not depict actual measurements. *See* Pet. at 40 ("the local coordinate system ***can easily be converted*** to actual measurements"). There is no indication that Figure 6 includes a reference grid or that such a grid corresponds to any three-dimensional model.

Instead, Avrahami accomplishes matching between two images – through the attempt to match polygonal planar sections from two images – not by registering the images to a common reference grid, but rather "by sliding the left polygon in the direction of the epipolar line in the right image space until the polygons achieve a maximum overlap in the right image space." Pet. at 40 (citing Avrahami at 45). An epipolar line is not a "grid," and therefore Avrahami does not disclose this claim limitation.

v. Avrahami Does Not Disclose "the roof estimation module is part of a network accessible roof modeling program executing on the computer system" (Claim 15)

Petitioner points to no evidence that Avrahami's algorithm is "part of a network accessible roof modeling program." *See, e.g.*, Pet. at 49-50. For example, Petitioner cites to the introduction of Avrahami for support, but that section merely describes uses for 3D city models, *i.e.*, "municipal management, planning, communications, security and defence, tourism, etc.," without elaborating on the algorithm that is Avrahami's actual focus. Again, Petitioner does little more than quote unrelated passages from Avrahami in its claim chart, which are irrelevant to the claim requirements, and accordingly its argument here should be rejected. *See TRW Auto.*, IPR2014-00294, Paper No. 21, at 4; *In re Fritch*, 972 F.2d at 1266.

H. Ground 6: The Combination Of Avrahami And Perlant Does Not Render Claim 10 Obvious

Neither Avrahami nor Perlant discloses what is claimed in claim 10. This combination does not render obvious claim 1 from which this claim depends (*see* Sections VI.G.i-ii *supra*), and as such, the combination cannot render obvious this claim. *See In re Fine*, 837 F.2d at 1076. As discussed in Sections VI.G.i-ii, Avrahami does not disclose numerous elements of claim 1, and Petitioner does not contend that Perlant meets any limitations of claim 1. Additionally, Petitioner relies on the same disclosure in Perlant for this limitation and offers no new disclosure or argument regarding Perlant as compared to Ground 2. Accordingly, for the same reasons described in Section VI.D above, Petitioner's argument should be rejected for those reasons as well.

I. Ground 7: The Combination Of Avrahami And AppliCad Does Not Render Claim 25 Obvious

The combination of Avrahami and AppliCad cannot render obvious this claim because that combination does not render obvious claim 16 from which claim 25 depends. *See* Sections VI.G.i-ii *supra*; *In re Fine*, 837 F.2d at 1076. As discussed in Sections VI.G.i-ii, Avrahami does not disclose numerous elements of claim 16, and Petitioner does not contend that AppliCad meets any limitations of claim 16.

J. Ground 8: The Combination Of Avrahami And Aerowest Does Not Render Claim 15 Obvious

The combination of Avrahami and Aerowest cannot render obvious this claim because that combination does not render obvious claim 12 from which claim 15 depends. *See* Sections VI.G.i-ii *supra*; *In re Fine*, 837 F.2d at 1076. Further, as discussed in Section VI.B.ii, Avrahami does not export a three-dimensional model, and the combination of Avrahami with Aerowest does not remedy these deficiencies.

VII. CONCLUSION

For the reasons discussed herein, Eagle View respectfully requests that the Board decline to institute *inter partes* review of the claims of the '152 Patent challenged by Xactware.

Date: May 23, 2016

Respectfully submitted,

/Gianni Cutri/

Gianni Cutri (Reg. No. 52,791)
gianni.cutri@kirkland.com
KIRKLAND & ELLIS LLP
300 North LaSalle
Chicago, Illinois 60654
Telephone: (312) 862-2000
Facsimile: (312) 862-2200

Jared Barcenas (Reg. No. 61,792)
jared.barcenas@kirkland.com
KIRKLAND ELLIS LLP
601 Lexington Avenue

New York, New York 10022
Telephone: (212) 446-4800
Facsimile: (212) 446-4900
Attorneys for Patent Owner

CERTIFICATE OF COMPLIANCE

This Patent Owner's Preliminary Response complies with the type-volume limitations as mandated in 37 C.F.R § 42.24, totaling 13,992 words. Counsel has relied upon the word count feature provided by Microsoft Word.

/ Gianni Cutri /
Gianni Cutri

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Patent Owner's Preliminary Response was served on May 23, 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:

Mark E. Nikolsky (Reg. No. 48,319) mnikolsky@mccarter.com MCCARTER & ENGLISH 100 Mulberry St. Newark, New Jersey 07102 Telephone: (973) 622-4444 Facsimile: (973) 624-7070	Joseph G. Monaghan (Reg. No. 66,022) jmonaghan@mccarter.com MCCARTER & ENGLISH 100 Mulberry St. Newark, New Jersey 07102 Telephone: (973) 622-4444 Facsimile: (973) 624-7070
Vadim E. Cherkasov (Reg. No. 65,243) vcherkasov@mccarter.com MCCARTER & ENGLISH 1600 Market St. Ste. 3900 Philadelphia, Pennsylvania 19103 Telephone: (215) 979-3800 Facsimile: (215) 979-3899	Amit R. Parikh (Reg. No. 65,271) aparikh@mccarter.com MCCARTER & ENGLISH 100 Mulberry St. Newark, New Jersey 07102 Telephone: (973) 622-4444 Facsimile: (973) 624-7070
Timothy P. Homlish (Reg. No. 66,174) thomlish@mccarter.com MCCARTER & ENGLISH 100 Mulberry St. Newark, New Jersey 07102 Telephone: (973) 622-4444 Facsimile: (973) 624-7070	

/ Gianni Cutri /
Gianni Cutri

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

XACTWARE SOLUTIONS, INC.
Petitioner

v.

PICTOMETRY INTERNATIONAL CORP.
Patent Owner

Case No. IPR2016-00594

Patent No. 8,542,880

PATENT OWNER'S PRELIMINARY RESPONSE

TABLE OF CONTENTS

I. INTRODUCTION 1

II. OVERVIEW OF THE CLAIMED INVENTIONS IN THE '880 PATENT 3

III. CLAIM CONSTRUCTION 5

IV. STANDARD FOR GRANTING *INTER PARTES* REVIEW 5

V. REDUNDANCY OF PETITIONER'S GROUNDS 7

VI. PETITIONER FAILS TO DEMONSTRATE A REASONABLE LIKELIHOOD THAT IT WILL PREVAIL 9

A. Petitioner Does Not Demonstrate That Hsieh Or Pictometry Is Prior Art 9

B. Ground 1: Abhyanker Does Not Anticipate Any Of The Challenged Claims 15

C. Ground 2: Pictometry Does Not Anticipate Any Of The Challenged Claims 21

D. Petitioner Articulates No Reasonable Rationale For Combining The References In Its Proposed Obviousness Combinations in Grounds 3 and 4 33

E. Ground 3: The Combination Of Abhaynker And Hsieh Does Not Render Any Of The Challenged Claims Obvious 43

F. Ground 4: The Combination Of Pictometry And Hsieh Does Not Render Any Of The Challenged Claims Obvious 44

VII. CONCLUSION 44

TABLE OF AUTHORITIES

Page(s)

Cases

Apple, Inc. v. DSS Tech. Mgmt., Inc.,
IPR2015-00369, Paper No. 14 (PTAB Aug. 12, 2015) 9, 13, 15, 16

In re Bayer,
568 F.2d 1357 (C.C.P.A. 1978) 12, 13

Bettcher Indus., Inc. v. Bunzl USA, Inc.,
661 F.3d 629 (Fed. Cir. 2011).....19

Cisco Sys., Inc. v. C-Cation Techs., LLC,
IPR2014-00454, Paper No. 12 (August 29, 2014).....6, 11

In re Cronyn,
890 F.2d 1158 (Fed. Cir. 1989).....9, 12

DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.,
567 F.3d 1314 (Fed. Cir. 2009).....41

Electronic Frontier Foundation v. Personal Audio
IPR2014-00070, Paper No. 21 (Apr. 18, 2014) 11

Funai Elec. Co. v. Gold Charm Ltd.,
IPR2015-01448, Paper No. 13 (Jan. 11, 2016).....35

Ex Parte Gerhard Duernberger,
Appeal No. 2010-007553 (P.T.A.B. July 31, 2013) 42

Goos Int'l Am., Inc. v. Graphic Mgmt. Assocs., Inc.,
739 F. Supp. 2d 1089 (N.D. Ill. 2010) 14

Graham v. John Deere Co. of Kansas City,
383 U.S. 1 (1966).....7

Haliburton Energy Servs., Inc., v. Dynamic 3D Geosolutions, LLC,
2015 WL 5565065 (PTAB Jan 12, 2015) 15

Intelligent Bio-Sys, Inc. v. Illumina Cambridge Ltd.,
No. 2015-1693, 2016 WL 2620512 (Fed. Cir. May 9, 2016).....6, 7, 34

In re Klopfenstein,
380 F.3d 1351 (Fed. Cir. 2004).....14

KSR Int'l Co. v. Teleflex Inc.,
550 U.S. 398 (2007) ..... *passim*

Liberty Mutual Ins. Co. v. Progressive Casualty Ins. Co.,
CBM2012-00003, Paper No. 7 (October 25, 2012) 7, 8

In re Lister,
583 F.3d 1307 (Fed. Cir. 2009) 11

Mintz v. Dietz & Watson, Inc.,
679 F.3d 1372 (Fed. Cir. 2012) 34

Northern Telecom, Inc. v. Datapoint Corp.,
908 F.2d 931 (Fed. Cir. 1990) 14

Oxford Nanopore Techs. v. Univ. of Washington,
IPR2014-00513, Paper No. 12 (Sept. 15, 2014) 10

Purdue Pharma L.P. v. Depomed, Inc.,
No. 2015-2029, 2016 WL 1161229 (Fed. Cir. Mar. 24, 2016) ..... *passim*

Qualcomm, Inc. v. ParkerVision, Inc.,
No. IPR2015-01825, Paper No. 8 (PTAB Mar. 8, 2016) 13

Qualcomm Inc. v. ParkerVision Inc.,
IPR2015-01819, Paper No. 8 (Mar. 8, 2016) 39

RCA Corp. v. Applied Digital Data Sys., Inc.,
730 F.2d 1440 (Fed. Cir. 1984) ..... *passim*

ResQNetCom Inc. v. Lansa, Inc.,
594 F.3d 860 (Fed. Cir. 2010) 15

Ex Parte Robert C. Brown,
Appeal No. 2005-0263 (P.T.A.B. Jan. 1, 2014) 42

Rothman v. Target Corp.,
556 F.3d 1310 (Fed. Cir. 2009) 42

Samsung Elecs. Co. v. Rembrandt Wireless Techs., LP
IPR2014-00514, Paper No. 18 (PTAB Sept. 9, 2014) 10

ServiceNow, Inc. v. Hewlett-Packard Co.,
IPR2015-00707, Paper No. 14 (Nov. 2, 2015) 13, 15

Smart Modular Techs., Inc. v. Netlist, Inc.,
IPR2014-01373, Paper No. 16 (Mar. 13, 2015) 35

Spears v. Holland
Interf. No. 104,681, Paper No. 30 (BPAI Mar. 13, 2002) 6

SRI Int'l, Inc. v. Internet Sec. Sys., Inc.,
511 F.3d 1186 (Fed. Cir. 2008)..... *passim*

Stryker Corp. v. Karl Storz Endoscopy-America, Inc.,
IPR2015-00672, Paper No. 9 (Sept. 1, 2015) 35, 40, 41, 42

Symantec v. Trustees of Columbia Univ.,
IPR2015-00371, Paper No. 13 (June 17, 2015) 10, 12, 13

Trintec Indus., Inc. v. Top-U.S.A. Corp.,
295 F.3d 1292 (Fed. Cir. 2002).....18

Unigene Labs., Inc. v. Apotex, Inc.,
655 F.3d 1352 (Fed. Cir. 2011).....34, 42

Wowza Media Systems, LLC v. Adobe Sys. Inc.,
IPR2013-00054, Paper No. 12 (Apr. 8, 2013) 35, 36

Zetec Inc., v. Westinghouse Elec. Co., LLC.,
IPR2014-00384, Paper No. 10 (July 23, 2014).....8

Statutes

35 U.S.C. § 314(a) ..... *passim*

35 U.S.C. § 314(b) 10

Other Authorities

37 C.F.R. § 42.108(b) 6

37 C.F.R. § 42.108(c).....5

77 Fed. Reg. 48756 (Aug. 14, 2012).....5

TABLE OF EXHIBITS

This Patent Owner's Preliminary Response does not reference any exhibits beyond those already of record.

I. INTRODUCTION

Xactware Solutions, Inc.'s Petition should be denied. The '880 patent regards an improvement to the identification and retrieval of images for the purposes of determining attributes of a building's roof structure, which is important in connection with estimating and bidding roofing jobs. '880 patent at 1:13–21. Specifically, the '880 patent allows a user to accurately identify a target roof by, among other things, moving a "visual marker" around an aerial image. When the user places the marker in a "final location," that confirms correct identification of a roof, and the user is provided with "oblique" images corresponding to the location of the marker. *See id*. at claims 1, 14. This is a key aspect of the "process for determining attributes of a roof structure", *see id*. at claim 1, as it allows for accurate searching of a database for oblique images, which themselves are critical to "determining vertical measurements and/or roof pitches based on the imagery . . . ," *id*. at 11:17–19, and enable the creation of highly detailed roof estimate reports, such as those shown in, *e.g.*, *id*. at Figures 5E–5F.

The prior art submitted by Petitioner, however, is directed to vastly different applications, and is lacking fundamental aspects of the '880 patent's claims. Petitioner first presents Abhyanker (Ground 1), but that reference has nothing to do with roof estimation, and with respect to the '880 patent's specific claim elements, provides no mechanism for retrieving images from a database in response to user

inputs as set forth in the '880 patent. Indeed, unlike every one of the challenged claims, Abhyanker does not involve retrieving any images relating to a marker at all, let alone oblique images from a database as claimed. Although in Abhyanker users can move markers around an image on a screen, there are no additional images provided as a result of that movement. Petitioner's combination of Abhyanker with Hsieh (Ground 3) does not address this or any of the other fundamental deficiencies in Abhyanker – indeed, Petitioner only asserts this combination for purposes of four dependent claims, ***not*** the critical elements requiring retrieval of oblique images from a database – elements that Abhyanker indisputably lacks.

With respect to Pictometry (Ground 2), Petitioner has presented no evidence to this Board that this reference was publicly available before the critical date of the '880 patent, a flaw which on its own requires rejection of this Ground. Moreover, like Abhyanker, Pictometry fails to disclose numerous required elements of the challenged independent claims of the '880 patent. For example, Pictometry does not allow for movement of the alleged visual marker as required by the claims of the '880 patent. *See* '880 patent at claims 1, 14. Although a user can move the ***image*** under the alleged marker in Pictometry, the marker cannot itself be moved around a region on the image. This is a critical distinction, including because the visual marker of the '880 patent allows the user to adjust the

marker's location for purposes of accurately retrieving oblique images to use in roof estimation. And like Petitioner's earlier combination involving Abhyanker, its combination of Pictometry with Hsieh (Ground 4) is directed to certain dependent claims and does not address this nor other critical deficiencies.

Further undermining its Petition, Petitioner fails to provide a reasonable rationale for combining the references in its proposed obviousness combination; this is a critical omission in this instance, where, as discussed below, the proposed references for combination are incompatible with each other. Petitioner also fails to explain why its mirror-image Grounds 1 and 2, and its obviousness Grounds 3 and 4, are not redundant of each other. Accordingly, Petitioner has not met its burden of showing a reasonable likelihood that it will prevail with respect to at least one of the challenged claims, and the Board should decline to institute trial. *See* 35 U.S.C. § 314(a).

II. OVERVIEW OF THE CLAIMED INVENTIONS IN THE '880 PATENT

The '880 patent is directed to "processes and systems … for determining attributes of a roof structure of real-world three-dimensional building(s)." *See* '880 patent at Abstract. The specific user interactions required by the '880 patent claims are tailored to the needs of working with real-world aerial imagery, as

roofers and insurance companies do in determining attributes of roof structures. Here, Petitioner proposes four grounds of invalidity:

No.	References	Challenged Claims
Ground 1	Abhyanker	1, 2, 5, 8, 13-15 and 20
Ground 2	Pictometry	1-10 and 13-20
Ground 3	Abhyanker and Hsieh	4, 7, 17, and 19
Ground 4	Pictometry and Hsieh	4, 7, 17, and 19

Petitioner has challenged eighteen claims of the '880 patent, two of which are independent claims (1 and 14), and there is substantial overlap among the limitations of the independent and dependent claims. Each of the challenged independent claims is directed to a process for "determin[ing] attributes of a roof structure of a real-world three-dimensional building" that requires the use of "one or more oblique images of an aerial imagery database corresponding" to that roof structure. '880 patent at claims 1, 14.

Using claim 1 as an example, the process begins by providing "a computer input field for a user to input first location data generally corresponding to the location of the building." *See* '880 patent at claim 1. The next step uses the location of the building identified in the first step to provide "visual access to an aerial image of a region including the roof structure." *Id.* A "visual marker initially corresponding to [the] location data" is also displayed. *Id.* In the next

step, the "visual maker may be moved to a final location on top of the building" by the user. *Id.* The system then provides "a computer input capable of signaling user acceptance of the final location of the marker" so the user can accept the final location. *Id.* The final step is providing "visual access to one or more oblique images of an aerial imagery database corresponding to location coordinates of the final location." *See id.*

III. CLAIM CONSTRUCTION

Patent Owner agrees with Petitioner's proposed constructions for purposes of this IPR for the three terms Petitioner has suggested for construction: "location data" (claims 1–3 and 13–16), "visual marker" (claims 1 and 14), and "final location" (claims 1–3 and 13–16).

IV. STANDARD FOR GRANTING *INTER PARTES* REVIEW

A petition for *inter partes* review may only be granted when "the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least one of the claims challenged in the petition." 35 U.S.C. § 314(a); *see also* 37 C.F.R. § 42.108(c). Petitioner bears the burden of showing the statutory threshold has been met. *See* Office Patent Trial Practice Guide, 77 Fed. Reg. 48756 (Aug. 14, 2012). In determining whether to institute an *inter partes* review, the Board may "deny some

or all grounds for unpatentability for some or all of the challenged claims." 37 C.F.R. § 42.108(b); *see also* 35 U.S.C. § 314(a).

It is Petitioner's duty to provide sufficient grounds for the institution of a review "focus[ing] on concise, well organized, easy-to-follow arguments supported by readily identifiable evidence of record." *Cisco Sys., Inc. v. C-Cation Techs., LLC*, IPR2014-00454, Paper No. 12 (August 29, 2014) at 11. "The Board will not take on the role of advocate for a party, trying to make out a case the party has not adequately stated." *See, e.g.*, Standing Order ¶ 121.5.2 (BPAI Mar. 8, 2011); *see also Spears v. Holland*, Interf. No. 104,681, Paper No. 30 (BPAI Mar. 13, 2002) at 15 ("It is not the role of this board to help [Petitioner] . . . . That is the role of [Petitioner's] counsel as an advocate, not the role of the board as an unbiased and impartial decision maker. Taking sides to aid one party to the detriment of the other is not what we do.").

Further, "[u]nlike district court litigation—where parties have greater freedom to revise and develop their arguments over time and in response to newly discovered material—the expedited nature of IPRs bring with it an obligation for petitioners to make their case in their petition to institute." *Intelligent Bio-Sys, Inc. v. Illumina Cambridge Ltd.*, No. 2015-1693, 2016 WL 2620512, at *8 (Fed. Cir. May 9, 2016) (affirming Board's rejection of Petitioner's reply raising new arguments). "While the Board's requirements are strict ones, they are

requirements of which petitioners are aware when they seek to institute an IPR." *Id*.

V. REDUNDANCY OF PETITIONER'S GROUNDS

Petitioner has identified four grounds of invalidity but those grounds exhibit horizontal and vertical redundancy and are not entitled to consideration. *See Liberty Mutual Ins. Co. v. Progressive Casualty Ins. Co.*, CBM2012-00003, Paper No. 7 (October 25, 2012).

As to claims 1, 2, 5, 8, 13-15, and 20, Ground 1 (Abhyanker) and Ground 2 (Pictometry) are redundant. These grounds are horizontally redundant because the Petition fails to identify what is missing between Grounds 1 and 2 as to those claims that necessitates having both. Similarly, as to claims 4, 7, 17, and 19, Ground 3 (the combination of Abhyanker and Hsieh) is horizontally redundant with Ground 4 (the combination of Pictometry and Hsieh) as the Petition fails to provide any identification as to what necessitates the overlapping grounds. "[M]ultiple grounds, which are presented in a redundant manner by a petitioner who makes no meaningful distinction between them, are contrary to the regulatory and statutory mandates, and therefore are not all entitled to consideration." *Liberty Mutual*, CBM2012-00003, Paper No. 7, at 2.

Differences between the claimed invention and the prior art are a critically important underlying factual inquiry for any obviousness analysis. *Graham v. John*

Deere Co. of Kansas City, 383 U.S. 1, 17 (1966). Yet here, the Petitioner does not state the differences between the challenged claim and the prior art, and relies instead on the Patent Owner and the Board to determine those differences. The invitation to embark on an examination of the patent, rather than an adjudication of fully developed grounds, is an abuse of PTAB resources and places an unfair, undue burden on the Patent Owner. As such, these grounds must be declined. *Zetec Inc., v. Westinghouse Elec. Co., LLC.*, IPR2014-00384, Paper No. 10 (July 23, 2014) at 14 (Unsupported assertions of inherency and/or "common sense" are improper bases for initiating IPR.).

Further, Petitioner's Ground 2 (Pictometry) is vertically redundant as to Ground 4 (the combination of Pictometry and Hsieh) for claims 4, 7, 17, and 19. "In the former case, fewer references than the entire combination are sufficient to render a claim obvious, and in the latter case the entire combination is relied on to render the same claim obvious." *Liberty Mutual Ins. Co.*, CBM2012-00003, at 3. "There must be an explanation of why the reliance in part may be the stronger assertion as applied in certain instances and why the reliance in whole may also be the stronger assertion in other instances." *Id*. But there is no such explanation here.

Consideration of these overlapping and redundant grounds would unnecessarily consume time and resources for both the PTAB and the Patent Owner.

VI. PETITIONER FAILS TO DEMONSTRATE A REASONABLE LIKELIHOOD THAT IT WILL PREVAIL

A. Petitioner Does Not Demonstrate That Hsieh Or Pictometry Is Prior Art

i. Legal Standard for Establishing A Reference As Publicly Available Prior Art

Pursuant to 35 U.S.C. § 314(a), Petitioner has the burden to establish in its Petition a reasonable likelihood of success, including providing competent evidence sufficient for a threshold showing that the asserted references are "printed publications." *See Apple, Inc. v. DSS Tech. Mgmt., Inc.*, IPR2015-00369, Paper No. 14 (PTAB Aug. 12, 2015) at 10 (citing 35 U.S.C. § 314(a)). But Petitioner has failed to establish the public accessibility of Hsieh and Pictometry – at least one of which Petitioner relies on for both Grounds 2, 3, and 4 of the Petition – and as such, the Board should not institute trial on any of those grounds.

Public accessibility is the touchstone for determining whether a particular reference qualifies as a printed publication. *See SRI Int'l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1194–95 (Fed. Cir. 2008). The mere fact that a member of the interested public possibly could have accessed the document is not enough to establish public availability. *See id.* at 1196; *see also In re Cronyn*, 890 F.2d 1158,

1161 (Fed. Cir. 1989). Rather, a given reference is deemed publicly accessible upon a showing that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it. *See SRI Int'l, Inc.*, 511 F.3d at 1194–95.

Where a Petitioner fails to make a preliminary showing that the relied-upon art was publicly accessible, the Board routinely declines to institute trial, as there is no reasonable likelihood that the petitioner will prevail. *See* 35 U.S.C. § 314(b); *Symantec v. Trustees of Columbia Univ.*, IPR2015-00371, Paper No. 13 (June 17, 2015) at 9 (declining to institute where Petitioner "failed to meet its burden of at least a preliminary showing" of public availability); *Oxford Nanopore Techs. v. Univ. of Washington*, IPR2014-00513, Paper No. 12 (Sept. 15, 2014) at 17–18 (declining to institute where Petitioner did not show a "reasonable likelihood" that references constituted prior art).

Conclusory statements concerning public availability, such as those presented here, are insufficient. Rather, the Board requires petitioners to bring forth legitimate evidence of public availability before instituting trial. For example, in *Samsung Elecs. Co. v. Rembrandt Wireless Techs., LP*, the Board found no public availability where the petitioner's declarant addressed only whether any person could conceivably have accessed the publication, and not whether an ordinarily skilled individual, exercising reasonable diligence would

have found it. *See* IPR2014-00514, Paper No. 18 (PTAB Sept. 9, 2014) at 9–10. In *Electronic Frontier Foundation v. Personal Audio, LLC*, the Board found that neither of the petitioner's declarants addressed how one of ordinary skill, exercising reasonable diligence, would have been able to find the Internet address of the prior art reference. *See* IPR2014-00070, Paper No. 21 (Apr. 18, 2014) at 23–24. As a result, the Board found the petitioner's showing of public availability to be insufficient. *Id*. As set forth below, Petitioner has similarly not met its burden with respect to Hsieh or Pictometry, and the Board should decline to institute trial on all Grounds that rely on them.

ii. Hsieh

Petitioner identifies the Hsieh reference, a research paper purportedly deposited at the University Libraries of Carnegie Mellon University (Ex. 1005) as prior art and uses the date of "November 1995" in its citations thereof. *See* Pet. at vi ("List of Exhibits"). But Petitioner has not made even a facial showing that this Hsieh reference was publicly available at any time before the priority date of the '880 patent. *See id*.

First, there is no evidence that Hsieh was indexed or otherwise made accessible to the public, as required. *See SRI*, 511 F.3d at 1194; *see also In re Lister*, 583 F.3d 1307, 1317 (Fed. Cir. 2009) (declining to find public availability based only "pure speculation" about the practices of the document's custodian).

The Federal Circuit has consistently rejected the public availability and accessibility of materials in university libraries without evidence of indexing or cataloguing that would provide a way for interested members of the public to locate the reference. *See, e.g.*, *In re Cronyn*, 890 F.2d at 1161 (thesis not catalogued or indexed by subject matter, only by author's name); *In re Bayer*, 568 F.2d 1357, 1362 (C.C.P.A. 1978) (thesis uncataloged and unshelved as of priority date). Petitioner provides no support that Hsieh was indexed or cataloged such that interested members of the public could find it, or any other similar information establishing that it was publicly available as of the priority date of the '880 patent, *i.e.*, May 22, 2009.

The Board has previously resolved an analogous petition by declining to institute trial. In *Symantec*, Petitioner did not provide evidence "tending to show when the [Cardinale] thesis actually may have been released or distributed to the public." *Symantec*, IPR2015-00371, Paper No. 13, at 8. Even though the thesis in question included "an Abstract and a list of subject terms," the Board found that Petitioner failed to meet its burden because it pointed to no evidence that the thesis was entered into an electronic database prior to the priority date, "much less into a publicly accessible database prior to the critical date." *Id.* at 8–9. Here, the Petition does not make even a preliminary showing that Hsieh was physically available to the public, that Hsieh was shelved in a manner that it could be located

by members of the public, or that Hsieh was indexed such that interested members of the public could find it through the exercise of reasonable diligence.

Second, while the date on Hsieh's cover page – November 1995 – may indicate the date of its creation, it is insufficient on its own to establish public accessibility – additional evidence confirming that Hsieh was actually available and accessible on that date is required. *See SRI*, 511 F.3d at 1197; *In re Bayer*, 568 F.2d at 1362 (date of thesis did not support public availability where library kept theses in an office awaiting shelving); *Qualcomm, Inc. v. ParkerVision, Inc.*, No. IPR2015-01825, Paper No. 8 (PTAB Mar. 8, 2016) at 19 (denying institution where there was no evidence of the normal practices of the library when receiving books); *Symantec*, IPR2015-00371, Paper No. 13, at 8–9 (denying institution where no evidence when the reference was indexed or entered into an electronic library database). Moreover, the "November 1995" date is unsubstantiated hearsay. *See ServiceNow, Inc. v. Hewlett-Packard Co.*, IPR2015-00707, Paper No. 14 (Nov. 2, 2015) at 9–10; *Apple, Inc.*, IPR2015-00369, Paper No. 14, at 6.

For the foregoing reasons, the Board should decline to institute trial on Grounds 3 and 4, which rely exclusively on Hsieh for numerous claim elements.

iii. Pictometry

Petitioner has not made any showing that Pictometry was publicly accessible as of the priority date of the '880 patent despite relying on that reference for

Grounds 2 and 4. Petitioner has not submitted an affidavit attesting to its availability online, or any other evidence regarding how "persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence" would have located it. *See SRI Int'l*, 511 F.3d at 1196.

Moreover, Petitioner cannot rely on the Pictometry reference itself to establish public availability. Indeed, Pictometry clearly indicates it was not publicly available, noting that the "permission of Pictometry International Corporation" was required before it could be "reproduced, stored in a retrieval system or transmitted, in any form or by any means":

> No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic or mechanical, including photocopying, recording, or otherwise, without the prior written permission of Pictometry International Corporation.

Pictometry (Ex. 1004) at ii. Indeed, such protective measures to restrict public release militate against a finding of the requisite public accessibility (or dissemination), and Petitioner would need to establish wide dissemination in such circumstances. *See, e.g., Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 936–37 (Fed. Cir. 1990) (documents with protective measures distributed to fifty person or organizations involved in the same project held not publically accessible); *In re Klopfenstein*, 380 F.3d 1351 (Fed. Cir. 2004) (protective measures indicate documents are not publically accessible); *Goos Int'l Am., Inc. v.*

Graphic Mgmt. Assocs., Inc., 739 F. Supp. 2d 1089, 1120 (N.D. Ill. 2010) (operating manuals for apparatus were not publicly accessible, where they were distributed to a small group with whom the manual's author had contracted and who took steps to prohibit wide distribution); *see also Haliburton Energy Servs., Inc., v. Dynamic 3D Geosolutions, LLC*, 2015 WL 5565065, *15-16 (PTAB Jan 12, 2015). Despite these requirements, Petitioner has made ***no showing*** of any such public accessibility or dissemination.

Moreover, the copyright date listed in Pictometry is not only irrelevant to prior art status because it is hearsay, but also because it is a copyright date for a reference that one of skill in the art could ***not*** freely access. *See, e.g.*, *ResQNetCom Inc. v. Lansa, Inc.*, 594 F.3d 860, 865 (Fed. Cir. 2010) (upholding finding that software user manual was not publicly available where manual was "not marked with any indicum of either publication or secrecy" absent any evidence that manual was "published or disseminated."); *ServiceNow*, IPR2015-00707 at 9-10; *Apple, Inc.*, IPR2015-00369, Paper No. 14 at 6. Accordingly, the Board should not institute trial on Grounds 2 or 4.

B. Ground 1: Abhyanker Does Not Anticipate Any Of The Challenged Claims

i. Abhyanker Does Not Disclose "providing visual access to one or more oblique images of an aerial imagery database

corresponding to location coordinates of the final location" (Claims 1 and 14)

Abhyanker does not disclose "providing visual access to one or more oblique images of an aerial imagery database corresponding to location coordinates of the final location." In the '880 patent, a visual marker is moved to a "final location" on a building. The '880 patent describes a claimed process for "determining attributes of a roof structure of a real-world three-dimensional building" that requires the use of "one or more oblique images of an aerial imagery database corresponding" to that roof structure. '880 patent at claim 1; *see also id*. at claim 14. In the '880 patent, a visual marker is moved from its initial location corresponding to "location data" input by a user to a "final location" on top of the building. *See* '880 patent at claim 1; *id*. at 10:9–12 ("Such final location is on top of the building . . . and such movement more precisely identifies the location of the building roof structure . . . to be measured."). In response to the user's acceptance of this final location, the system provides oblique images corresponding to the location. *See id*. at claim 1; *id*. at 11:17-19. This is a key aspect of the "process for determining attributes of a roof structure", *see* '880 patent at claim 1, as it allows for accurate searching of a database for oblique images, which themselves are critical to "determining vertical measurements and/or roof pitches based on the

imagery . . . ," '880 patent at 11:17–19, and enable the creation of highly detailed roof estimate reports, such as those shown in, *e.g.*, *id*. at Figures 5E–5F.

Abyhanker, by contrast, does not utilize this approach. First, Abhyanker does not provide visual access to oblique images that correspond to a final location of Abhyanker's alleged marker, let alone in response to user movement and acceptance of the marker at its final location. In Abhyanker – which has nothing to do with roof estimation and thus has no interest in oblique images – users can move markers around an image on a screen, but there are no additional images that are provided as a result of that movement. Abhynaker (Ex. 1003) at ¶42 (allowing users "to simultaneously move any one or more of the set of markers until the neighboring places and/or profiles are claimed by a claimant so that more accurate location markers are enabled through a user-generated wiki edit of markers identified in the geo-spatial environment."); *see also id.* at ¶53 (describing "a drag and drop algorithm that enables the user to sequentially and/or concurrently relocate markers."). Although other users can subsequently move the marker to another location, no new images are ever produced, let alone oblique images corresponding to the marker's location as required by the claims. Abhyanker at ¶ 45. This is a major distinction and is sufficient to reject Ground 1 in its entirety.

Petitioner's citations for this aspect of the claims are unpersuasive. While Petitioner cites Paragraph 89 and several figures from Abhyanker as allegedly

disclosing these claim limitations, Petitioner is incorrect. *See* Pet. at 12 (citing Abhyanker at ¶ 89, Figs. 1, 4, 5, 7 and 9). Paragraph 89 relates to functionality unrelated to image retrieval, much less the oblique image retrieval relevant here. Although Paragraph 89 discusses the ability to place markers on views having different perspectives, no further images are provided once the marker is placed. Abhyanker at ¶ 89. At best, Paragraph 89 concerns how marker placement can occur in connection with three exemplary views. *See id.* ("[there] may be a distorted view showing the replaced polygon underlying the relocated marker based on a polygon and color matching algorithm …."). Petitioner's citations to Figures 1, 4, 5, 7, and 9 likewise do not illustrate or otherwise disclose the image retrieval claimed here, nor does Petitioner attempt to explain how those figures have such a disclosure. To the contrary, each of those figures shows a single view upon which a marker is placed, with no subsequent retrieval of any images (let alone oblique images).

Second, Abhyanker does not disclose a "database" of oblique images. Petitioner concedes this, arguing instead that "one of ordinary skill in the art would understand that the electronic aerial images are stored in a database." Pet. at 12. But that does not suffice for anticipation; if the database is not explicitly present (as Petitioner concedes), it must be inherent – *i.e.,* that the missing material is ***necessarily present***. *See, e.g.*, *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d

1292, 1295 (Fed. Cir. 2002) ("Inherent anticipation requires that the missing descriptive material is 'necessarily present,' not merely probably or possibly present, in the [reference]."); *Bettcher Indus., Inc. v. Bunzl USA, Inc.*, 661 F.3d 629, 639 (Fed. Cir. 2011) (inherent anticipation "may not be established by probabilities or possibilities"). Petitioner does not argue that the database is necessarily present, nor could it, as oblique images could be stored in variety of ways without a database. Moreover, because Abhyanker is merely focused on the movement and placement of the alleged markers, there is no need for such a database of images.

ii. Abhyanker Does Not Disclose "[t]he process of claim 1 and wherein said first location data comprised street address data. . ." (Claim 2) Or "[t]he non-transient computer memory of claim 14, wherein said first location data comprised street address data" (Claim 15)

Abhyanker cannot anticipate claims 2 or 15, because as set forth in Sections VI.B.i *supra*, Abhyanker does not anticipate the claims on which they depend, claims 1 and 14. *See, e.g.*, *RCA Corp. v. Applied Digital Data Sys., Inc.*, 730 F.2d 1440, 1446 (Fed. Cir. 1984) (if reference does not anticipate an independent claim, it cannot anticipate its associated dependent claim).

iii. Abhyanker Does Not Disclose Having The "providing acts provided over an internet interface" (Claims 5, 8, 20)

Abhyanker cannot anticipate claims 5, 8, and 20 because as set forth in Sections VI.B.i–ii *supra*, Abhyanker does not anticipate the claims on which they depend, claims 1–5 and/or 14. *See e.g.*, *RCA Corp.*, 730 F.2d at 1446. Petitioner does not contend that Abhyanker anticipates claims 3 and 4, and as such there can be no anticipation of claim 5. *See id.*; Pet. at 12.

Further, as detailed in Sections VI.B.i *supra*, Abhyanker does not disclose "providing visual access to one or more oblique images of an aerial imagery database corresponding to location coordinates of the final location," or any of the other providing acts claimed in the independent claims on which claims 5, 8, and 20 depend. *See* '880 at claims 1, 14. As such, Abhyanker necessarily cannot disclose these "providing acts provided ***over an internet interface***" as required by claims 5, 8, and 20. Indeed, Petitioner cites completely different paragraphs of Abhyanker for these dependent claims as compared to independent claims 1 and 14 where the "providing acts" are claimed, *compare* Pet. at 10, 12–14 *with* Pet. at 12, 15, further illustrating that Abhyanker does not disclose the required claim elements here. Specifically, the portions of Abhyanker that Petitioner relies on for these dependent claims – Paragraphs 12, 47, and 106 – concern the receipt or exchange of data concerning the location of markers, not the use of the Internet to provide images as required. *See* Abhyanker at ¶ 12 ("processing a latitude and longitude data provided by a mobile device"); *id.* ("syndicating a user updated

marker data to other mapping providers across the web"); *id*. at ¶ 47 ("The syndication module 114 may syndicate the user updated marker data to other mapping providers across the web"); *id*. at ¶ 106 ("a user updated marker data may be syndicated … to other mapping providers across the web").

iv. Abhyanker Does Not Disclose "[t]he process of claim 1, further comprising providing visual access to the one or more images of the aerial imagery database . . ." (Claim 13)

Abhyanker cannot anticipate claim 13 because Abhyanker does not anticipate the claim on which it depends, claim 1. *See, e.g.*, *RCA Corp.*, 730 F.2d at 1446.

C. Ground 2: Pictometry Does Not Anticipate Any Of The Challenged Claims

i. Pictometry Does Not Disclose "on the aerial image of the region, providing a visual marker that is moveable on a computer monitor around said region" (Claims 1, 14)

Pictometry does not disclose "on the aerial image of the region, providing a visual marker ***that is moveable on a computer monitor around said region.***" As discussed below, the alleged marker in Pictometry is not moveable. Although a user can move the image under the marker, the marker cannot be moved around a region shown in the image on the screen.

Pictometry is a user guide describing a software system called "Electronic Field Study" (EFS) that "lets [users] view and work with aerial images contained

in [the] Pictometry® Image Library." Pictometry at 41. Petitioner identifies the "Navigation Point" described in Pictometry as the claimed visual marker for this claim limitation. *See* Pet. at 19 (citing Pictometry at 49, 124, Figs. 2–7). The Navigation Point crosshair of Pictometry, however, is not "moveable on a computer monitor around [the aerial image of the region]." Although a user may move the image underlying the crosshair, a user ***cannot*** move the Navigation Point crosshair to different locations around the image. *See* Pictometry at 86 ("The Navigation Point is the location at which the last search was done. It is identified by a red crosshair on the image."). Instead, no matter how the underlying image is moved, the Navigation Point stays at a ***fixed location***. *See id.* at 73 (the crosshair "appears on the Navigation Point—the last point searched"). Pictometry repeatedly confirms this indisputable fact, by illustrating how the Navigation Point stays at the same location even as images are rotated:

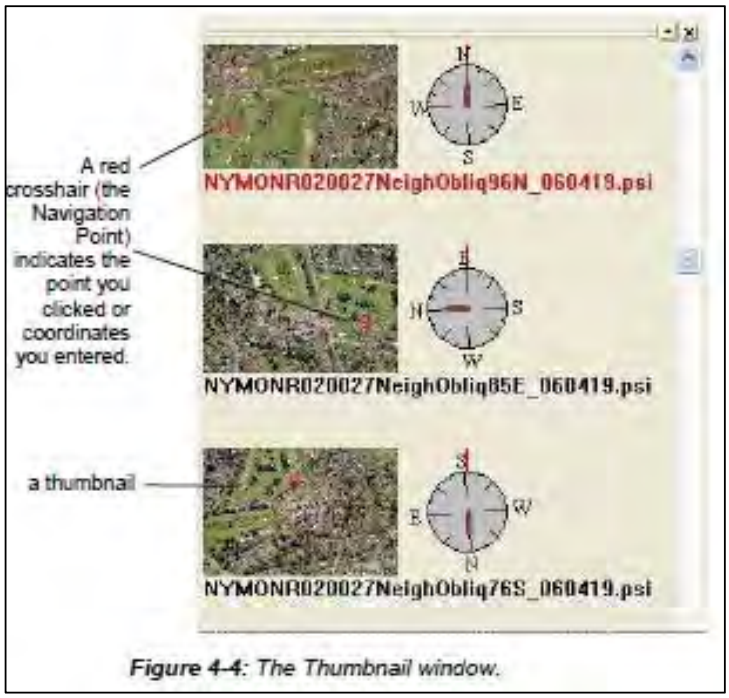


Figure 4-4: The Thumbnail window.

Pictometry at Fig. 4-4. Indeed, Pictometry warns users that "if you've scrolled or panned the image, the Navigation Point may not be visible in the Image window" – because the Navigation Point stays at the same location. Pictometry at 86 (cited by Pet. at 18–19).

This is in stark contrast the '880 patent's claims, which require that the visual marker be "moveable" around the claimed region. *See* '880 patent at claim 1. This is a critical distinction for multiple reasons. First, the claims require that the marker be moveable, not the underlying image. *See, e.g.*, *id*; *see also id*. at 10:7–9 (explaining that user may "move the marker (by click and dragging via computer mouse, arrows, or otherwise) to a final location . . ."). Second, providing a marker that is moveable around the region of an image is a critical aspect of the

invention, as it allows the user to adjust the marker's location for purposes of accurately retrieving oblique images to use in roof estimation. *See id*. at 10:9–12 ("Such final location is on top of the building . . . and such movement more precisely identifies the location of the building roof structure . . . to be measured."). In Pictometry, no matter where the image is moved, the Navigation Point stays in the same location, and as such, there is no ability to make the marker adjustments described and claimed by the '880 patent. *See, e.g.*, Pictometry at 73, 86.

While Petitioner argues that the Navigation Point crosshair "is moved relative to the building by panning within the image, thereby relocating the crosshair to a new location that is different from the first location. . . ," Pet. at 43, that is incorrect, and the Navigation Point instead operates in a fundamentally different way. As discussed above, Petitioner's citations to Pictometry prove the opposite – *i.e.,* that the Navigation Point is not moveable at all, and certainly not to moveable around the claimed region to different locations. *See* Pet. at 19 (citing Pictometry at 49, 59, 73, 86, 124, Figs. 2–7). Likewise, Petitioner's citation to the documentation of the "Center Navigation feature" (Pictometry at 124; *see also* Pet. at 19) also does not identify a disclosure of a "visual marker that is moveable on a computer monitor around said region." As explained in Pictometry, with this feature, "the point currently in the center of the Image window is now the Navigation Point. The red crosshairs moves to that point." Pictometry at 124.

This merely centers the Navigation Point at the center of the image; it ***does not*** allow the Navigation Point to be moveable "around" the region of imagery as required, let alone be moveable to any particular location after the centering feature is used. *See, e.g.*, Pictometry at 124. This is a key aspect of the '880 patent – as discussed above, by being able to move the marker "around" the region of the image, a user can adjust the marker location to accurately select right location for image retrieval. *See* '880 patent at 10:7–12.

ii. Pictometry Does Not Disclose That A "visual marker may be moved to a final location on top of the building to more precisely identify the location of the building roof structure" (Claims 1, 14)

As set forth in Section VI.C.i *supra*, the "Navigation Point" of Pictometry is not moveable, and as such, may ***not*** "be moved to a final location on top of the building to more precisely identify the location of the building roof structure." *See* '880 patent at claims 1, 14. Petitioner cites no new or different support in Pictometry here as compared to the limitation discussed in Section VI.C.i *supra*, *compare* Pet. at 19 *with* Pet. at 20, and for the same reasons discussed there, this claim limitation cannot be met. Indeed, Petitioner does not dispute that the claimed functionality is missing in Pictometry, noting in its claim chart that "Pictometry discloses ***moving the image*** . . . to reposition the Navigation Point over a different area of the image" but does not contend that the "Navigation

Point" itself is moveable. *See* Pet. at 19. As discussed above, these are vastly different functionalities in the context of the '880 patent, which requires that the marker be moved around the region on an image, and also moved to a final location to make adjustments in order to ensure the proper oblique images are retrieved from the database. *See* '880 patent at 10:7–12. The Navigation Point in Pictometry, by contrast, cannot be moved to a different location at all, even when the underlying image is moved. *See, e.g.*, Pictometry at 73, 86.

iii. Pictometry Does Not Disclose "wherein said first location data comprised street address data, and wherein said location coordinates of said final location are translated to latitude and longitude coordinates" (claims 2 and 15) or "wherein said first location data comprised street address data, and wherein said location coordinates of said final location are translated to latitude and longitude coordinates" (Claims 2 and 15)

Pictometry cannot anticipate claims 2 or 15, because Pictometry does not anticipate the claims on which they depend, claims 1 and 14. *See e.g.*, *RCA Corp.*, 730 F.2d at 1446.

iv. Pictometry Does Not Disclose "wherein said image corresponding to the first location data is from a first imagery database from which said final location is selected and is internet-based imagery having a corresponding street address look up field" (claims 3, 16)

Pictometry cannot anticipate claims 3 or 16 because Pictometry does not disclose the claims on which they depend, claims 1 and 14. *See e.g.*, *RCA Corp.*, 730 F.2d at 1446. Further, Pictometry does not disclose the claimed "internet-based imagery." Petitioner contends without any citation that the "Image Library" of Pictometry is "linked to the user via the Internet." *See* Pet. at 23. Petitioner then proceeds to string-cite 14 pages of Pictometry as alleged support for its assertion. *See id*. (citing Pictometry at pp. 19-24, 45-49, 133-135). But none of these citations refers to the Internet to supply images for the "first imagery database."

Pages 19–24 of Pictometry discuss the Image Warehouse, and how it may be on a corporate network. *See* Pictometry at 19 ("[f]or most users, the Image Warehouse is stored on their PC's hard drive or on their corporate LAN"); *see also id.* at 2 ("A network server, if you plan on installing your data on a network"). But there is no indication that the images in the Image Warehouse are internet-based. Pages 45–49 describe an Image Library, but do not show internet-based imagery. Pages 133–135 describe the PentaView alternate view, but do not identify any internet-based imagery.

v. Pictometry Does Not Disclose "using said latitude and longitude coordinates to access imagery from the second imagery database" (claim 3) or "use said latitude and

longitude coordinates to access imagery from the second imagery database" (claim 16)

Pictometry cannot anticipate claims 3 or 16 because Pictometry does not disclose the claims on which they depend, claims 1 and 14. Additionally, Pictometry does not disclose the claimed "second imagery database." Claims 3 and 16 each require the use of two databases: "a first imagery database" which supplies an image for movement of the visual marker and in which the "final location is selected", *see* '880 patent at Claims 3, 16, and "a second imagery database," which supplies the oblique images that are provided to the user of the system, *see id*. While Petitioner contends, without citation to a specific part of Pictometry, that "[t]he oblique images . . . can be obtained from a different database ***or folder*** of the Image Library based on the latitude and longitude coordinates for the Navigation Point," *see* Pet. at 23 (emphasis added), that is incorrect. Although Pictometry discloses the use of images in separate folders, those are not different databases. The folders in Pictometry are used to store a subset of images, but do not provide any database functionality for those images. *See* Pictometry at 19–24, 45–47. Indeed, Pictometry never refers to the folders as databases. Moreover, as illustrated by Figure 2-4 from Pictometry below, the "Image Warehouse" – which Petitioner contends is the second database (*see* Pet. at

21, 31–33) – is a subfolder of the "Image Library" – which Petitioner contends is the claimed first database – and ***not*** a separate database:

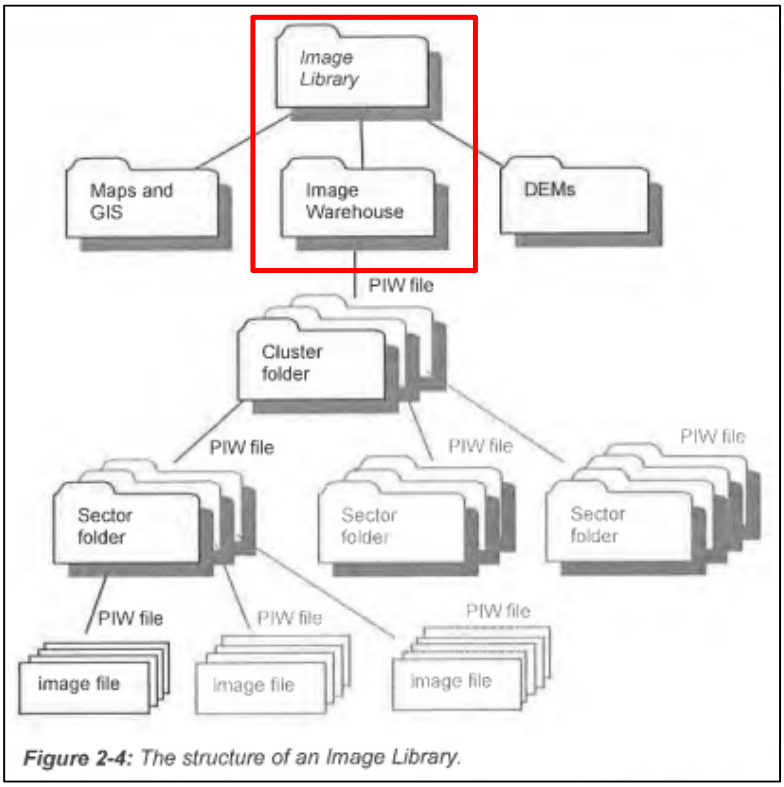


Figure 2-4: *The structure of an Image Library.*

Pictometry at Fig. 2-4.

The remainder of the 14 pages of Pictometry cited by Petitioner similarly do not disclose a second database. *See id*. (citing Pictometry at 19–24, 45–49, 133–135). Petitioner cites to pages 19–24, but these pages relate to configuring an Image Warehouse. As discussed above, the Image Warehouse is a folder in the Image Library, not a separate second database. Petitioner next cites to pages 45–49, but these merely provide an explanation of the files and folders used in accessing the Image Library. Finally, Petitioner's citation to pages 133–35

describe the PentaView functionality ("simultaneously view a set of five images of the same location"), but do not disclose a second imagery database.

Even if there were a second database disclosed in Pictometry, which as discussed above there is not, Pictometry would still fail to disclose these limitations in claims 3 and 16 because there is no disclosure of "using said latitude and longitude coordinates to access imagery from the second imagery database." Petitioner cannot show disclosure of "using said latitude and longitude coordinates to access imagery from the second imagery database" because Pictometry does not allow the use of latitude and longitude coordinates to switch to a different database as Petitioner alleges. Petitioner alleges that latitude and longitude coordinates are set using the Navigation Point. *See* Pet. at 23 ("based on the latitude and longitude coordinates for the Navigation Point."). But, Pictometry clarifies that in repositioning the Navigation Point, "the tools [are] limited to the area that your Image Warehouse covers." Pictometry at 127. As such, Pictometry does not allow switching to a different database (or even a different Image Warehouse) using the Navigation Point as Petitioner alleges. Indeed, Pictometry teaches that switching to a different Image Warehouse is not done using latitude or longitude coordinates. *See, e.g.*, Pictometry at 57 ("From the list of warehouses, select the warehouse that you want to work with.").

vi. Pictometry Does Not Disclose "generating, in computer memory, outline drawings around outlines corresponding to roof planes based on tracing from said imagery" (claims 4, 7) or "generate, in computer memory, outline drawings around outlines corresponding to roof planes based on tracing from said imagery" (claims 17, 19)

Pictometry cannot anticipate claims 4, 7, 17, or 19 because Pictometry does not disclose the claims on which they depend, claims 1 and 14. *See e.g.*, *RCA Corp.*, 730 F.2d at 1446. Furthermore, Pictometry cannot anticipate claims 4 or 17 because Pictometry does not disclose additional claims on which they depend, claims 2, 3, 15, and 16. *See id.*

vii. Pictometry Does Not Disclose "generating, in computer memory, outline drawings around outlines corresponding to roof planes based on tracing from said imagery from said second imagery database" (claims 4, 17)

Pictometry cannot anticipate claims 4 or 17 because Pictometry does not disclose additional claims on which they depend, claims 1, 2, 3, 14, 15, and 16. *See e.g.*, *RCA Corp.*, 730 F.2d at 1446. Furthermore, as explained in Section VI.C.v above, Pictometry does not disclose "imagery from said second imagery database" because Pictometry's navigation features are limited to a single imagery database. *See* Pictometry at 57, 127; *see supra*, Section VI.C.v.

Moreover, the additional evidence cited by Petitioner in connection with this limitation also does not show a second imagery database. *See* Pet. at 24–25 (citing Pictometry at 197, 213, 214, 226, Fig. 12-4). Page 197 shows a measurement of an area on a building. Pages 213 and 214 describe "user-defined annotations" consisting of text, lines, circles, points, and icons. Finally, page 226 and Figure 12-4 show a parking lot with several annotation lines. Indeed, the evidence shows Petitioner's cited functionality would use a single imagery database. *See* Pictometry at 57, 127.

viii. Pictometry Does Not Disclose "provided over an internet interface" (Claims 5, 8, 20)

Pictometry cannot anticipate claims 5, 8, or 20 because Pictometry does not anticipate the claims on which they depend, claims 1 and 14. *See e.g.*, *RCA Corp.*, 730 F.2d at 1446. Moreover, Pictometry cannot anticipate claim 5 because Pictometry does not anticipate additional claims on which it depends, claims 2, 3, and 4. *See id*.

ix. Pictometry Does Not Disclose "providing a printed report that includes an aerial image of the building roof structure" Claims (6, 9, 18)

Pictometry cannot anticipate claims 6, 9, or 18, because Pictometry does not anticipate the claims on which they depend, claims 1 and 14. *See e.g.*, *RCA Corp.*, 730 F.2d at 1446. Moreover, Pictometry cannot anticipate claim 6 because

Pictometry does not anticipate additional claims on which it depends, claims 2, 3, 4, and 5. *See id*.

x. Pictometry Does Not Disclose "the printed report includes a latitude reference and/or a longitude reference corresponding to the location of the building roof structure" (claim 10)

Pictometry cannot anticipate claim 10, because Pictometry does not anticipate the claims on which it depends, claims 1 and 9. *See e.g.*, *RCA Corp.*, 730 F.2d at 1446.

xi. Pictometry Does Not Disclose "providing visual access to the one or more images of the aerial imagery database corresponding to the final location data" (claim 13)

Pictometry cannot anticipate claim 13, because Pictometry does not disclose the claim on which it depends, claim 1. *See e.g.*, *RCA Corp.*, 730 F.2d at 1446.

D. Petitioner Articulates No Reasonable Rationale For Combining The References In Its Proposed Obviousness Combinations in Grounds 3 and 4

i. Legal Standard For Combining References In Obviousness Combinations

Petitioner has "failed to sufficiently show that a skilled artisan would have had a reason to combine the teachings of [Hsieh with either Abhyanker or Pictometry] to achieve the claimed invention" of the '880 patent, and the Board should not institute trial for this additional reason as well. *See Purdue Pharma*

L.P. v. Depomed, Inc., No. 2015-2029, 2016 WL 1161229, at *6 (Fed. Cir. Mar. 24, 2016) (affirming Board's final written decision that petitioner failed to prove challenged claims unpatentable as obvious over the cited prior art).

"Obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination." *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011) (citing *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)). It is "important to identify ***a reason*** that would have prompted a person of ordinary skill in the relevant field to combine the elements ***in the way*** the claimed new invention does." *Purdue*, 2016 WL 1161229, at *5 (quoting *KSR*, 550 U.S. at 418) (emphasis in original). "[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR*, 550 U.S. at 418. A patent challenger must demonstrate both "that a skilled artisan would have been motivated 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 in doing so." *Intelligent Bio-Sys. Inc.*, 2016 WL 2620512, at *6; *see also Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1379 (Fed. Cir. 2012) ("Obviousness requires a court to walk a tightrope blindfolded (to avoid hindsight) – an enterprise best pursued with the safety net of objective evidence."). This is not a requirement that can be

satisfied by mere conclusory statements; rather, facts and reasoning must be provided:

> Although the obviousness analysis may not be confined by any formalistic test, or by overemphasis on the explicit teachings of prior art publications, a petitioner must nevertheless make a sufficient showing that is more than "mere conclusory statements," to establish a reason that would have prompted a skilled artisan to combine the prior art teachings in the way of the claimed invention.

Purdue, 2016 WL 1161229, at *5 (quoting *KSR*, 550 U.S. at 418-419); *Wowza Media Systems, LLC v. Adobe Sys. Inc.*, IPR2013-00054, Paper No. 12 (Apr. 8, 2013) at 15 ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statement; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.")

Petitioner has fallen far short of making these required showings here, and the Board routinely declines to institute trial in these circumstances. *See, e.g.*, *Funai Elec. Co. v. Gold Charm Ltd.*, IPR2015-01448, Paper No. 13 (Jan. 11, 2016) at 17 (declining to institute on obviousness grounds where Petitioner failed to establish motivation to combine); *Stryker Corp. v. Karl Storz Endoscopy-America, Inc.*, IPR2015-00672, Paper No. 9 (Sept. 1, 2015) (same); *Smart Modular Techs., Inc. v. Netlist, Inc.*, IPR2014-01373, Paper No. 16 (Mar. 13, 2015) (same).

ii. Petitioner Fails To Demonstrate It Would Have Been Obvious To Combine Hsieh With Abhyanker (Ground 3)

Petitioner's only contention as to an alleged motivation to combine these references is that "[a] person of ordinary skill in the art could have combined the elements as claimed by electronically incorporating the outline model generation feature of Hsieh into the image manipulation and marker repositioning system of Abhyanker." Pet. at 41. This conclusory statement, however, is incorrect.

There is nothing in Hsieh to suggest that the SiteCity system described therein, which was a research tool at the Digital Mapping Laboratory at Carnegie Mellon University, is capable of generating output for other systems to use. *See* Hsieh at 1–2. Indeed, there is no disclosure in Hsieh of outputting models. This is a significant deficiency: the "outline drawings" requirement are central to the dependent claims at issue (*see* '880 patent at claims 4, 17, 14, 19), and Petitioner's inability to identify compatible references on this issue highlights the non-obviousness of the claims. Petitioner's omission of reasoning behind its proposed combination is a critical failure and supports denial of institution. *Purdue*, 2016 WL 1161229, at *5; *KSR*, 550 U.S. at 418-419; *Wowza Media*, IPR2013-00054, Paper No. 12, at 15.

Further, the systems described in Abhyanker are directed to mapping in a general urban or suburban environment, and do not describe 3D model generation.

See Abhyanker at Fig. 5, ¶ 48 ("The neighborhood 118A-N may be a geographically localized community located within a larger city, town and/or suburb"). As such, the models Abhyanker would require as inputs from Hsieh in Petitioner's purported combination are highly complex, and beyond the scope of what Hsieh could generate. Specifically, Hsieh is not capable of handling buildings with complex roof structures, as would be found in larger cities or suburban environments. *See* Hsieh at 71 ("[M]ore general building object models are needed to handle scenes where the roof structures are complex."). Moreover, Abhyanker's mapping environment includes not only buildings, but also trees and roads. *See* Abhyanker at Fig. 5. But Hsieh is limited to generating simple "three dimensional man-made structures," *see* Hsieh at 1, and would additionally be unable to model these trees, roads, and similar elements.

At best, Petitioner's proposed combination is based on impermissible hindsight. *See Purdue*, 2016 WL 1161229 at *6. Neither Hsieh nor Abhyanker recognizes a problem that would have motivated a person of ordinary skill in the art to modify the references in the manner proposed by the petition.

iii. Petitioner Fails To Demonstrate It Would Have Been Obvious To Combine Hsieh With Pictometry (Ground 4)

Petitioner's only contention as to an alleged motivation to combine Hsieh with Pictometry is the same as that offered for Abhyanker, that "[a] person of

ordinary skill in the art could have combined the elements as claimed by electronically incorporating the outline model generation feature of Hsieh into the image manipulation and marker repositioning system of Pictometry." Pet. at 48. This repetitive statement is incorrect with respect to this combination as well.

As an initial matter, as discussed in Section VI.D.ii above, there is nothing in Hsieh to suggest the SiteCity system described therein is capable of generating output for other systems to use, much less the specific 3D models that would be required according to Petitioner's proposed combination. *See* Hsieh at 1–2. Indeed, there is no disclosure in Hsieh of outputting models, and for this reason alone, the combination fails.

Further, Pictometry has no disclosure of being able to accept such 3D models of buildings. For example, Pictometry discusses importing a grid (Pictometry at 279), but grids are two-dimensional, not three-dimensional. *See* Pictometry at Figure 14-4 (identifying x and y dimensions). Similarly, Pictometry discloses use of "ALOHA annotations" (Pictometry at 449), but the ALOHA annotations are two-dimensional, not three-dimensional. Pictometry at 449-50. Pictometry's GIS layers similarly allow users to import two-dimensional annotations from a variety of sources. Pictometry at 297-99. There is no disclosure in Pictometry that allows for import of the three-dimensional models described in Hsieh.

Here again, Petitioner's proposed combination is based on impermissible hindsight, and should be rejected. *See Purdue*, 2016 WL 1161229 at *6.

iv. Petitioner's Conclusory Expert Testimony Should Be Rejected

Petitioner's reliance on the declaration of Harold Schuch adds nothing to Petitioner's conclusory motivation to combine arguments. Schuch "essentially repeats the arguments advanced by Petitioner in its Petition" (*compare* Pet. at 15, 50 *with* Ex. 1006 ¶¶ 57-59) and as such, offers no persuasive evidence supporting the combination. *See Qualcomm Inc. v. ParkerVision Inc.*, IPR2015-01819, Paper No. 8 (Mar. 8, 2016) at 29 ("We also are not persuaded by the cited testimony of Dr. Larson that purportedly supports Qualcomm's rationale to combine the teachings of Thodesen and Maas because it essentially repeats the arguments advanced by Qualcomm in its Petition."). As in *Qualcomm*, the Board should disregard Schuch's declaration on this issue. *See id.*

v. Petitioner's Boilerplate Assertions Regarding Motivation To Combine Should Be Rejected

In addition to its generalized, conclusory statements concerning the combinations of Hsieh with Abhyanker or with Pictometry discussed above, Petitioner makes a number of boilerplate assertions listing MPEP sections after its claim charts, which Petitioner contends support the proposed combinations. *See* Pet. at 35–36, 40–42, 45, 47–49. Almost without exception, these arguments are

not supported by any citation to the references themselves, or expert testimony, and in each case merely repeat the same conclusory grounds discussed above without providing any additional rationale for combining the references. These arguments should be rejected as well.

As this Board has consistently found, boilerplate assertions such as these that lack evidence or explanation are insufficient to establish obviousness. For example, in *Stryker v. Karl Storz Endoscopy*, IPR2015-00672, Paper No. 9, at 13, the Board rejected an unsupported and unexplained claim that "the combination of Endsley and Adler for use in an endoscope would have involved merely combining known elements according to known methods to yield predictable results or the simple substitution of one known element for another to obtain predictable results," because the petitioner did not explain why "one of ordinary skill in the art relating to endoscopic cameras would look to a camera such as Endsley, which is suitable for videoconferencing."

Petitioner's arguments here suffer from the same fatal defect. Specifically, Petitioner's arguments accompanying its claim charts merely state, without analysis, that the references could be combined, including by using "known techniques." *See, e.g.*, Pet. at 41 ("[A] person of ordinary skill in the art would have found it obvious to incorporate the outline model generation of Hsieh with the image manipulation and marker repositioning system of Abhyanker as doing so

would amount to using known techniques to improve similar devices in the same way."); *id.* at 48 (same argument for Hsieh and Pictometry). That Petitioner's assertions incorporate legal standards verbatim from the MPEP is irrelevant, and is certainly no substitute for the explicit "reasoning" based on the facts, as required by the cases. *Stryker*, IPR2015-00672, Paper No. 9, at 7.

As another example, Petitioner refers to "predictable results" as a basis for its alleged obviousness combinations. *See, e.g.*, Pet. at 40–41 ("a person of ordinary skill in the art would have found it obvious to incorporate the outline model generation of Hsieh with the image manipulation and marker repositioning system of Abhyanker as doing so would be combining prior art elements according to known methods to yield predictable results"); *id.* at 45 (same for Hsieh and Pictometry); *see also id.* at 41 ("One of ordinary skill in the art could have applied the functionality of Hsieh in the base device of Abhyanker with predictable results."); *id.* at 47–48 (same for Hsieh and Pictometry). Petitioner merely parrots the standards from the MPEP.

Moreover, the Petition fails to make the required showing to support a finding of obviousness. Indeed, "[a]lthough predictability is a touchstone of obviousness, the 'predictable result' discussed in *KSR* refers not only to the expectation that prior art elements are capable of being physically combined, but also that the combination would have worked for its intended purpose." *DePuy*

Spine, Inc. v. Medtronic Sofamor Danek, Inc., 567 F.3d 1314, 1326 (Fed. Cir. 2009) (citing *KSR*, 550 U.S. at 414–15). And as the Board held in *Stryker*, this argument fails where, as here, the "Petitioner has not explained sufficiently why, or identified evidence that shows, the invention described in the [challenged patent] falls into a very predictable field, or that one of ordinary skill in the art would have possessed the requisite skills to make the proposed combination, or that one of ordinary skill in the art would have anticipated reasonably the combination to function in an ordinary and expected way." *Stryker*, IPR2015-00672, Paper No. 9, at 14 (citing *Rothman v. Target Corp.*, 556 F.3d 1310, 1319–20 (Fed. Cir. 2009) and *Unigene Labs.*, 655 F.3d at 1360).

Petitioner concludes its boilerplate MPEP section with the assertion that "outline model generation" described in certain of the challenged claims is nothing more than ornamentation and thus "should be afforded no patentable weight." Pet. at 42, 49. This type of argument is routinely rejected where, as here, the alleged "ornamentation" serves a specific function in the context the patent. *See, e.g.*, *Ex Parte Robert C. Brown*, Appeal No. 2005-0263, fn. 1 (P.T.A.B. Jan. 1, 2014) ("This citation [to *In re Seid*] quite plainly is inapposite to the case before us since the appealed claim 1 feature under consideration unquestionably performs a function and therefore does not relate to ornamentation only"); *Ex Parte Gerhard*

Duernberger, Appeal No. 2010-007553, (P.T.A.B. July 31, 2013); *see also* '880 patent at 1:26–29, 13:31–38.

E. Ground 3: The Combination Of Abhaynker And Hsieh Does Not Render Any Of The Challenged Claims Obvious

Ground 3 challenges dependent claims 4, 7, 17, and 19. As an initial matter, Petitioner relies only on Abhyanker for disclosure of their parent claims 1, 3, 14, and 16. Thus, for the reasons in Section VI.B above, Abhyanker does not disclose those claims and for this reason alone, Ground 3 should be rejected. *See e.g.*, *RCA Corp.*, 730 F.2d at 1446. Ground 3 should additionally be rejected as explained below.

i. Neither Abhyanker Nor Hsieh Discloses A "second imagery database" (Claims 4 and 17)

Abhyanker does not disclose a "secondary imagery database" as required in claims 4 and 17, and Petitioner does not specifically identify any disclosure in Abhyanker alleging such disclosure. *See* Pet. at 39–40. Indeed, Petitioner does not contend that Abhyanker anticipates these claims, effectively conceding that Abhyanker is missing this claim element. *See* Pet. at 9–15. Hsieh also does not disclose a "secondary imagery database." Nor does Petitioner identify a secondary image database in Hsieh. Instead, Hsieh discloses use of images from a single imagery database, namely "the aerial images distributed under the RADIUS

program." *See* Hsieh at 31, 53, 57. Petitioner does not specifically address this requirement or provide any citations showing a second imagery database.

F. Ground 4: The Combination Of Pictometry And Hsieh Does Not Render Any Of The Challenged Claims Obvious

Ground 4 challenges dependent claims 4, 7, 17, and 19. As an initial matter, Petitioner relies only on Pictometry for disclosure of their parent claims 1, 3, 14, and 16. Thus, for the reasons in Section VI.C above, Pictometry does not disclose those claims and for this reason alone, Ground 4 should be rejected. *See e.g.*, *RCA Corp.*, 730 F.2d at 1446. Ground 4 should additionally be rejected as explained below.

i. Neither Pictometry Nor Hsieh Discloses A "second imagery database" (Claims 4 and 17)

As detailed in Section VI.C.v above, Pictometry does not disclose a secondary imagery database. And as detailed in Section VI.E.i above, Hsieh also does not disclose a "secondary imagery database."

VII. CONCLUSION

For the reasons discussed herein, Pictometry respectfully requests that the Board decline to institute *inter partes* review of the claims of the '880 patent challenged by Xactware.

Date: June 2, 2016

Respectfully submitted,

/Gianni Cutri/
Gianni Cutri (Reg. No. 52,791)

gianni.cutri@kirkland.com
KIRKLAND & ELLIS LLP
300 North LaSalle
Chicago, Illinois 60654
Telephone: (312) 862-2000
Facsimile: (312) 862-2200

Jared Barcenas (Reg. No. 61,792)
jared.barcenas@kirkland.com
KIRKLAND ELLIS LLP
601 Lexington Avenue
New York, New York 10022
Telephone: (212) 446-4800
Facsimile: (212) 446-4900

Attorneys for Patent Owner

CERTIFICATE OF COMPLIANCE

This Patent Owner's Preliminary Response complies with the type-volume limitations as mandated in 37 C.F.R § 42.24, totaling 9,887 words. Counsel has relied upon the word count feature provided by Microsoft Word.

/ Gianni Cutri /
Gianni Cutri

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Patent Owner's Preliminary Response was served on June 2, 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:

Mark E. Nikolsky (Reg. No. 48,319) mnikolsky@mccarter.com MCCARTER & ENGLISH 100 Mulberry St. Newark, New Jersey 07102 Telephone: (973) 622-4444 Facsimile: (973) 624-7070	Joseph G. Monaghan (Reg. No. 66,022) jmonaghan@mccarter.com MCCARTER & ENGLISH 100 Mulberry St. Newark, New Jersey 07102 Telephone: (973) 622-4444 Facsimile: (973) 624-7070
Vadim E. Cherkasov (Reg. No. 65,243) vcherkasov@mccarter.com MCCARTER & ENGLISH 1600 Market St. Ste. 3900 Philadelphia, Pennsylvania 19103 Telephone: (215) 979-3800 Facsimile: (215) 979-3899	Amit R. Parikh (Reg. No. 65,271) aparikh@mccarter.com MCCARTER & ENGLISH 100 Mulberry St. Newark, New Jersey 07102 Telephone: (973) 622-4444 Facsimile: (973) 624-7070
Timothy P. Homlish (Reg. No. 66,174) thomlish@mccarter.com MCCARTER & ENGLISH 100 Mulberry St. Newark, New Jersey 07102 Telephone: (973) 622-4444 Facsimile: (973) 624-7070	

/ Gianni Cutri /
Gianni Cutri

UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

EAGLE VIEW TECHNOLOGIES, INC., and PICTOMETRY INTERNATIONAL CORP.,	)	
Plaintiffs,	)	
v.	)	
	)	Civil Action No.
XACTWARE SOLUTIONS, INC., and VERISK ANALYTICS, INC.,	)	1:15-cv-07025-RBK-JS
Defendants.	)	*Filed Electronically*

SECOND AMENDED JOINT CLAIM CONSTRUCTION AND PREHEARING STATEMENT

Pursuant to L. Pat. R. 4.3 and the Court's Scheduling Order, Plaintiffs Eagle View Technologies, Inc. ("Eagle View") and Pictometry International Corp. ("Pictometry," collectively, "Plaintiffs") and Defendants Xactware Solutions, Inc. ("Xactware") and Verisk Analytics, Inc. ("Verisk," collectively, "Defendants") provide their Joint Claim Construction and Prehearing Statement concerning U.S. Patent Nos. 8,078,436 ("the '436 patent"), 8,170,840 ("the '840 patent"), 8,209,152 ("the '152 patent"), 8,818,770 ("the '770 patent"), 8,825,454 ("the '454 patent"), 9,129,376 ("the '376 patent"), and 9,135,737 ("the '737 patent") (collectively, the "Patents-in-Suit").

I. Background

In this action, Plaintiffs assert seven patents directed to roof estimation software.

Pursuant to L. Pat. R. 4.2(d), the parties met and conferred and reached agreement on the construction of certain claim terms.[1] There are currently approximately ten unique claim terms recited in the patents in suit requiring construction by the Court, with some claim terms recited in more than one asserted patent.

The following chart lists the disputed claim terms and identifies the asserted patent claims in which they appear.[2] For the Court's convenience, a ***bolded and italicized*** claim number denotes a claim in which the claim term appears in the body of that claim. On the other hand, a claim number that is not bolded and italicized designates a dependent claim that includes the claim term by virtue of dependency upon an independent claim. The Parties have also noted the claims Plaintiffs are asserting at the beginning of each section. In some instances, the claim term in dispute appears in Plaintiffs' dependent claim by virtue of being part of a non-asserted independent claim.

A. '436 Patent – Claims 1, 2, 5, 8, 18, 21, 36, 37 Asserted:

Term	Asserted Claim
correlate/correlating the first aerial image with the second aerial image	***1***, ***2***, 5, 8, ***18***, 21

B. '840 Patent – Claims 4, 10, 11, 15, 16, 18 Asserted:

Term	Asserted Claim
pitch determination marker	4, ***10***, 11, 15, ***16***, 18

[1] By agreeing that no construction is necessary for claim terms, no party is agreeing to any previously identified position and/or construction by any party, and no party waives any of its arguments, claims, or defenses in this case.

[2] The parties have made every effort to ensure the accuracy of the chart contained herein. However, to the extent that the charts in this section disagree with the charts in Exhibit A, the charts in Exhibit A should control.

C. ’152 Patent – Claim 8 Asserted:

Term	Asserted Claim
display/displaying a projection of the feature from the modified three-dimensional model onto the first and second aerial images as a line drawing of the feature, each overlaid on corresponding locations of the feature on the first and second aerial images	***1***,8

D. ’770 Patent – Claim 12 Asserted:

Term	Asserted Claim
first visual marker / the at least one first visual marker	***1***, ***12***
second visual marker	***1***, 12

E. ’454 Patent – Claims 26 and 33 Asserted:

Term	Asserted Claim
a second line drawing	***26***, 33
changing, by the computer system of the roof estimate report system, a line in the second line drawing that corresponds to the same feature in the first line drawing that was changed by the user, the change in the second drawing being made by the computer system in response to the change that was made by the user in the first line drawing	***26***, 33

F. ’376 Patent – Claims 17, 19, 20, 23 Asserted:

Term	Asserted Claim
pitch determination marker	***17, 19, 20***, 23
envelope tool	***23***

G. ’737 Patent – Claims 8 and 25 Asserted:

Term	Asserted Claim
“making corresponding changes, by the at least one processor of the roof estimate report system, to the line drawing overlying the second aerial image[,]” “displaying corresponding changes to the line drawing overlaid on the second aerial image” and “changing, by the computer system of the roof estimate report system, a line in the second line drawing that corresponds to the same feature in the first line drawing that was changed, the change in the second drawing being made by the computer system in response to the change that was made by the user in the first line drawing”	***1***, 8, ***16***, 25
“the second line drawing” and “the line drawing overlying/overlaid on the second aerial image”	***1***, 8, ***16***, ***25***

II. Local Patent Rule 4.3

A. Construction of Claim Terms on Which the Parties Agree

In accordance with L. Pat. R. 4.3(a), the parties have met and conferred and agreed upon the following claim constructions:

Claim Term	Claims	Agreed Upon Construction
“top plan view”	’436 patent, claims ***1***, 2, 5, 8, ***18***, 21, ***36***, 37	“an aerial view of an object that is taken from a position vertically or nearly vertically above the object”
“oblique perspective view” / “oblique view” / “perspective view”	’436 patent, claims ***1***, 2, 5, 8, 18, 36, 37 ’454 patent, claim ***33*** ’737 patent, claims ***1***, *8*	“an aerial view of an object that is taken from a position that is neither vertically nor nearly vertically above the object”

"not a stereoscopic pair"	'436 patent, claims ***1***, 2, 5, 8	"a pair of images of the same object taken from different view directions"
"a roof estimation module that is stored on the memory"	'436 patent, claims ***1***, 2, 5, 8 '840 patent, claims ***10***, 11, 15	"a module that is stored on the memory, and which performs image acquisition, roof modeling, and report generation functions"
"aerial image"	'840 patent, claims 4, ***10***, 11, 15, ***16*** '770 patent, claim ***12*** '376 patent, claims ***17***, 19, ***20***, 23	"an image taken from the air"

B. Each Party's Proposed Construction of Each Disputed Term and Identification of Intrinsic and Extrinsic Evidence

In accordance with L. Pat. R. 4.3(b), the parties provide attached Exhibit A. Exhibit A is a table that provides, for each patent, the claim terms in dispute, the claim numbers associated with the claim terms, and a side-by-side comparison of the parties' proposed constructions of each disputed term, including the evidence that each party is presenting in support of its position and/or in opposition to the other party's position.

C. Identification of Most Significant Terms

Local Patent Rule 4.3(c) requires the parties to identify: (i) the terms whose construction will be most significant to the resolution of the case and (ii) any term whose construction will be case or claim dispositive or substantially conducive to promoting settlement. Although all terms for construction are important to the resolution of this case, the parties believe that it is premature at this time to classify any of the disputed terms as case or claim dispositive, or substantially conducive to promoting settlement.

D. Anticipated length of Time Necessary for the Claim Construction Hearing

In accordance with L. Pat. R. 4.3(d), Plaintiffs anticipate that the Claim Construction Hearing will require four hours, which would include attorney argument and may include testimony from expert witnesses. Defendants anticipate that the Claim Construction Hearing will require one day, which would include attorney argument and may include testimony from expert witnesses. The parties further expect to divide the time equally between Plaintiffs and Defendants.

Both parties reserve their right to revise their respective positions with respect to the anticipated length of time necessary for the Claim Construction Hearing to the extent the number of claim disputes changes before the date of the Hearing. In that event, the parties will meet and confer to determine whether an agreed-upon proposal for the length of time can be met.

E. Anticipated Witnesses to Be Called at the Claim Construction Hearing

1. Plaintiffs' Witness

In accordance with L. Pat. R. 4.3(e), Plaintiffs propose calling Dr. Peter Allen to offer expert testimony relating to the proper construction of the terms, as outlined in the charts below. Dr. Allen may also rebut arguments presented by Defendants or Defendants' expert. Alternatively or additionally, Plaintiffs may call Dr. Chandrajit L. Bajaj to offer expert testimony relating to the proper construction of the terms or to rebut arguments presented by Defendants or Defendants' expert.

2. Defendants' Witness

Defendants propose calling Dr. Joseph L. Mundy and Dr. Geoff Cohen to offer expert testimony relating to the proper constructions of the terms, as outlined in the charts below. Dr. Mundy and Dr. Cohen may also rebut arguments presented by Plaintiffs or Plaintiffs' expert.

Dated: February 8, 2017

s/ Scott S. Christie
Scott S. Christie
McCARTER & ENGLISH, LLP
Four Gateway Center
100 Mulberry Street
Newark, New Jersey 07102
Phone: (973) 848-5388
Fax: (973) 297-3981

Counsel for Defendants Xactware Solutions, Inc. and Verisk Analytics, Inc.

s/Liza M. Walsh
Liza M. Walsh
Hector D. Ruiz
Eleonore Ofosu-Antwi
WALSH PIZZI O'REILLY FALANGA LLP
One Riverfront Plaza
1037 Raymond Boulevard, Suite 600
Newark, New Jersey 07102
(973) 757-1100

OF COUNSEL:

Michael W. De Vries
(admitted *pro hac vice*)
KIRKLAND & ELLIS LLP
333 South Hope Street
Los Angeles, CA 90071
(213) 680-8400

Jared Barcenas
(admitted *pro hac vice*)
KIRKLAND & ELLIS LLP
601 Lexington Avenue
New York, NY 10022
(212) 446-4800

Adam R. Alper
(admitted *pro hac vice*)
Brandon Brown
(admitted *pro hac vice*)
KIRKLAND & ELLIS LLP
555 California Street
San Francisco, CA 94104
(415) 439-1400

Gianni Cutri (admitted *pro hac vice*)
KIRKLAND & ELLIS LLP
300 North LaSalle
Chicago, IL 60654
(312) 862-2000

CERTIFICATE OF SERVICE

I hereby certify that on February 8, 2017, I electronically filed the foregoing paper with the Clerk of the Court using the ECF system which will send notification of such filing to all counsel of record on the ECF Service List.

Dated: February 8, 2017

s/Liza M. Walsh
Liza M. Walsh
Hector D. Ruiz
WALSH PIZZI O'REILLY FALANGA LLP
One Riverfront Plaza
1037 Raymond Boulevard, Suite 600
Newark, New Jersey 07102
Tel.: (973) 757-1100
Fax: (973) 757-1090
Email: lwalsh@thewalshfirm.com
hruiz@thewalshfirm.com
eofosuantwi@thewalshfirm.com

Attorneys for Plaintiffs

EXHIBIT A

The Parties' Proposed Constructions and Evidence Regarding Disputed Claim Terms[1], [2], [3]

U.S. Patent No. 8,078,436 – Claims 1, 2, 5, 8, 18, 21, 26, and 37 Asserted

#	Claim Term	Claim Numbers	Plaintiffs' Proposed Construction and Evidence	Defendants' Proposed Construction and Evidence
1.	"correlate/correlating the first aerial image with the second aerial image"	'436 patent, claims ***1***, ***2***, 5, 8, ***18***, 21	*No construction necessary* To the extent the Court requires a construction, Plaintiffs propose: receiving an indication of a corresponding feature that is shown	for each reference point on an object, registering a pair of points that includes a first point identified in the first aerial image and a second point identified in the second aerial image **Evidence**

[1] For the Court's convenience, a ***bolded and italicized*** claim number denotes a claim in which the claim term appears in the body of that claim. On the other hand, a claim number that is not bolded and italicized designates a dependent claim that includes the claim term by virtue of dependency upon an independent claim.

[2] For each claim term herein, Defendants incorporate by reference as opposition evidence and/or as supportive evidence all of the evidence identified by Plaintiffs herein with respect to the corresponding claim term, and Plaintiffs reserve their right to rely on, rebut and respond to all of the evidence identified by Defendants herein with respect to the corresponding claim term, including in any expert report, declaration or testimony.

[3] For any Figure referenced herein, the parties incorporate the text of the specification that reference and explain those figures. Likewise for any specification text that references and explains figures, the parties incorporate the referenced figures.

EX2018 / IPR2022-00734 / Page 460 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

#	Claim Term	Claim Numbers	Plaintiffs' Proposed Construction and Evidence	Defendants' Proposed Construction and Evidence
			in each of the first and second aerial images **Evidence** '436 at 14:5-9	FIG. 8; 6:50-67; 8:22-41; 9:5-25; 14:3-11; 13:60-14:24 Defendants may rely on expert testimony concerning the meaning of this term to a person of ordinary skill in the art in light of the disclosures of the patents-in-suit.

EX2018 / IPR2022-00734 / Page 461 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

U.S. Patent No. 8,170,840 – Claims 4, 10, 11, 15, 16, and 18 Asserted

#	**Claim Term**	**Claim Numbers**	**Plaintiffs' Proposed Construction and Evidence**	**Defendants' Proposed Construction and Evidence**
2.	pitch determination marker	'840 patent, claims 4, ***10***, 11, 15, ***16***, 18	*No construction necessary* To the extent the Court requires a construction, Plaintiffs propose: a graphical user interface component that can be manipulated by a user to specify the pitch of a section of the roof **Evidence** '840 at 12:30-13:48, 21:45-58; Figs. 5A, 5B, 5C, 5D	a graphical user interface component, distinct from the displayed model of the roof, that can be manipulated by a user to specify the pitch of a section of the roof model **Evidence** Claim 5; FIGS. 5A-5D; FIGS. 6A-6E; FIG. 10; 3:5-31; 6:5-13; 12:16-15:6; 21:23-31; 21:45-22:28 Defendants may rely on expert testimony concerning the meaning of this term to a person of ordinary skill in the art in light of the disclosures of the patents-in-suit.

EX2018 / IPR2022-00734 / Page 462 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

U.S. Patent No. 8,818,770 – Claim 12 Asserted

#	Claim Term	Claim Numbers	Plaintiffs' Proposed Construction and Evidence	Defendants' Proposed Construction and Evidence
3.	first visual marker	'770 patent, claim ***12***	*No construction necessary* To the extent the Court requires a construction, Plaintiffs propose: a first graphical user interface component that can be manipulated by a user to specify roof points on a first aerial image **Evidence** '770 at 3:27-29, 9:47-61, 10:5-40, 10:50-54, 10:59-11:10, 11:61-12:9; Figs. 4B, 4C, 4E; '770 File History, 11/21/2013 Amendment at 10-11	a first graphical user interface component, distinct from a displayed model of a roof, that can be manipulated by a user to specify roof points on a first aerial image **Evidence** Claims 1 and 19; Figs. 4A-4F; FIGS. 6A-6D; FIG. 9; FIG. 11; 9-:16-12:15; 13:49-15:16; 19:31-21:22; 22:29-23:4 Defendants may rely on expert testimony concerning the meaning of this term to a person of ordinary skill in the art in light of the disclosures of the patents-in-suit.
4.	second visual marker	'770 patent, claim 12	*No construction necessary* To the extent the Court requires a construction, Plaintiffs propose: a second graphical user interface component used to specify roof points on a second aerial image	a second graphical user interface component, distinct from both the first visual marker and a displayed model of the roof, that can be manipulated by a user to specify roof points on a second aerial image

EX2018 / IPR2022-00734 / Page 463 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

#	Claim Term	Claim Numbers	Plaintiffs' Proposed Construction and Evidence	Defendants' Proposed Construction and Evidence
			Evidence '770 at 3:27-29, 9:47-61, 10:5-40, 10:50-54, 10:59-11:10, 11:61-12:9; Figs. 4B, 4C, 4E; '770 File History, 11/21/2013 Amendment at 10-11	**Evidence** Claims 1 and 19; Figs. 4A-4F; , FIGS. 6A-6D; FIG. 9; FIG. 11; 9-:27-12:15; 9:58-10:4; 13:49-15:16; 19:31-21:22; 22:29-23:4 Defendants may rely on expert testimony concerning the meaning of this term to a person of ordinary skill in the art in light of the disclosures of the patents-in-suit.

EX2018 / IPR2022-00734 / Page 464 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

U.S. Patent No. 8,209,152 – Claim 8 Asserted

#	Claim Term	Claim Numbers	Plaintiffs' Proposed Construction and Evidence	Defendants' Proposed Construction and Evidence
5.	displaying/display a projection of the feature from the modified three-dimensional model onto the first and second aerial images as a line drawing of the feature, each overlaid on corresponding locations of the feature on the first and second aerial images.	'152 patent, claim 8	*No construction necessary* To the extent the Court requires a construction, Plaintiffs propose: displaying/display a projection of the feature from the modified three-dimensional model onto the first and second aerial images as a line drawing of the feature, each overlaid on corresponding locations of the feature on the first and second aerial images **Evidence** '152 at 3:32-41, 13:49-56, 14:4-61, 22:26-23:32; Figs. 6A-D, 11	displaying a projection of the feature from the modified three-dimensional model onto both the first and second aerial images as a line drawing of the feature, each overlaid on corresponding locations of the feature on the first and second aerial images, so that the feature is displayed on the second aerial image as the user indicates the feature on the first aerial image **Evidence** Abstract; FIGS. 6A-6D; FIG. 11; 5:53-6:4; 13-49-15:9; 22:26-23:32; EV028607-17; EV030571-88; EV030632-45; EV030660-65. Defendants may rely on expert testimony concerning the meaning of this term to a person of ordinary skill in the art in light of the disclosures of the patents-in-suit.

EX2018 / IPR2022-00734 / Page 465 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

U.S. Patent No. 8,825,454 – Claims 26 and 33 Asserted

#	Claim Term	Claim Numbers	Plaintiffs' Proposed Construction and Evidence	Defendants' Proposed Construction and Evidence
6.	second line drawing	'454 patent, claims ***26***, 33	*No construction necessary* To the extent the Court requires a construction, Plaintiffs propose: second line drawing **Evidence** '454 at 3:3-8, 7:49-52, 8:22-36, 8:44-9:19; Figs. 2A, 2B, 3C-F	a second line drawing that is distinct from the first line drawing and is displayed on a second aerial image **Evidence** FIG. 6A-6D; FIG. 7A-7C; FIG. 11; 14:27-64; 13:52-16:4; 22:28-23:39; EV030571-88; EV030632-45; EV030660-65. Defendants may rely on expert testimony concerning the meaning of this term to a person of ordinary skill in the art in light of the disclosures of the patents-in-suit.
7.	changing, by the computer system of the roof estimate report system, a line in the second line drawing that corresponds to the same feature in the first line drawing that was changed by the user, the	'454 patent, claims ***26***, 33	*No construction necessary* To the extent the Court requires a construction, Plaintiffs propose: changing, by the computer system of the roof estimate report system, a line in the second line drawing that corresponds to the same feature in the first line drawing that was changed by the user, the change in	changing, by the computer system of the roof estimate report system, a line in the second line drawing that corresponds to the same feature in the first line drawing that was changed by the user, so that the computer system simultaneously displays the changes in both the first

EX2018 / IPR2022-00734 / Page 466 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

#	Claim Term	Claim Numbers	Plaintiffs' Proposed Construction and Evidence	Defendants' Proposed Construction and Evidence
	change in the second line drawing being made by the computer system in response to the change that was made by the user in the first line drawing		the second line drawing being made by the computer system in response to the change that was made by the user in the first line drawing **Evidence** '454 at 3:35-44, 5:55-6:8, 14:39-49, 14:54-64, 22:33-23:48; Figs. 6A-D, 11; '454 File History, 11/19/13 Amendment at 14 *McGraw-Hill Dictionary of Scientific and Technical Terms* 1788 (6th ed. 2003). *Webster's New World Computer Dictionary* 319 (10th ed. 2003).	line drawing and the second line drawing **Evidence** FIG. 6A-6D; FIG. 7A-7C; FIG. 11; 3:35-44; 4:42-5:2; 5:57-6:8; 13:52-16:4; 22:32-23:39; EV030571-88; EV030632-45; EV030660-65. Defendants may rely on expert testimony concerning the meaning of this term to a person of ordinary skill in the art in light of the disclosures of the patents-in-suit.

EX2018 / IPR2022-00734 / Page 467 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

U.S. Patent No. 9,135,737 – Claims 8 and 25 Asserted

#	Claim Term	Claim Numbers	Plaintiffs' Proposed Construction and Evidence	Defendants' Proposed Construction and Evidence
8.	"the second line drawing" and "the line drawing overlying/overlaid on the second aerial image"	'737 patent, claims 8, ***25***	*No construction necessary* To the extent the Court requires a construction, Plaintiffs propose: second line drawing; and the line drawing overlying/overlaid on the second aerial image **Evidence** '737 at 2:59-64, 7:37-40, 8:10-24, 8:33-9:6; Figs. 2A, 2B, 3C-F; '737 File History, 6/1/15 Amendment at 14	a second line drawing that is distinct from the first line drawing and is displayed on a second aerial image **Evidence** FIG. 6A-6D; FIG. 7A-7C; FIG. 11; 13:38-15:56; 22:17-23:24; EV031541-58; EV030571-88; EV030632-45; EV030660-65. Defendants may rely on expert testimony concerning the meaning of this term to a person of ordinary skill in the art in light of the disclosures of the patents-in-suit.
9.	"making corresponding changes, by the at least one processor of the roof estimate report system, to the line drawing overlying the second aerial image[,]" "displaying corresponding changes	'737 patent, claims 8, 25	*No construction necessary* To the extent the Court requires a construction, Plaintiffs propose: making corresponding changes, by the at least one processor of the roof estimate report system, to the line	changing, by the computer system of the roof estimate report system, a line in the second line drawing that corresponds to the same feature in the first line drawing that was changed by the user, so that the computer system displays the changes in the second line drawing

EX2018 / IPR2022-00734 / Page 468 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

#	Claim Term	Claim Numbers	Plaintiffs' Proposed Construction and Evidence	Defendants' Proposed Construction and Evidence
	to the line drawing overlaid on the second aerial image" and "changing, by the computer system of the roof estimate report system, a line in a second line drawing that corresponds to the same feature in the first line drawing that was changed, the change in the second line drawing being made by the computer system in response to the change that was made in the first line drawing"		drawing overlying the second aerial image[,] displaying corresponding changes to the line drawing overlaid on the second aerial image [and] changing, by the computer system of the roof estimate report system, a line in a second line drawing that corresponds to the same feature in the first line drawing that was changed, the change in the second line drawing being made by the computer system in response to the change that was made in the first line drawing **Evidence** '737 at 3:24-33, 5:43-63, 13:38-59, 14:13-50, 22:17-23:33; Figs. 6A-D, 11; '737 File History, 6/1/15 Amendment at 14, 16 *McGraw-Hill Dictionary of Scientific and Technical Terms* 1788 (6th ed. 2003).	as the user changes the feature on the first line drawing **Evidence** FIG. 6A-6D; FIG. 7A-7C; FIG. 11; 3:24-33; 4:30-58; 5:45-63; 13:38-15:56; 22:17-23:24; EV031541-58; EV030571-88; EV030632-45; EV030660-65. Defendants may rely on expert testimony concerning the meaning of this term to a person of ordinary skill in the art in light of the disclosures of the patents-in-suit.

EX2018 / IPR2022-00734 / Page 469 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

#	Claim Term	Claim Numbers	Plaintiffs' Proposed Construction and Evidence	Defendants' Proposed Construction and Evidence
			Webster's New World Computer Dictionary 319 (10th ed. 2003).	

EX2018 / IPR2022-00734 / Page 470 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

U.S. Patent No. 9,129,376 – Claims 17, 19, 20, and 23 Asserted

#	Claim Term	Claim Numbers	Plaintiffs' Proposed Construction and Evidence	Defendants' Proposed Construction and Evidence
10.	pitch determination marker	'376 patent, claims ***17, 19, 20***, 23	*No construction necessary* To the extent the Court requires a construction, Plaintiffs propose: a graphical user interface component that can be manipulated by a user to specify the pitch of a section of the roof **Evidence** '376 at 12:23-41, 12:66-13:39, 21:35-48; Figs. 5A-5D	a graphical user interface component, distinct from the displayed model of the roof, that can be manipulated by a user to specify the pitch of a section of the roof model **Evidence** FIGS. 5A-5D; FIG. 6A-6D; FIG. 10; 2:64-3:23; 5:64-6:5; 12:9-14:64; 21:13-22:18 Defendants may rely on expert testimony concerning the meaning of this term to a person of ordinary skill in the art in light of the disclosures of the patents-in-suit.
11.	envelope tool	'376 patent, claim ***23***	*No construction necessary* To the extent the Court requires a construction, Plaintiffs propose: a graphical user interface component that can be manipulated by a user to specify the pitch of a section of the	a graphical user interface component, distinct from the displayed model of the roof, that can be manipulated by a user to specify the pitch of a section of the roof model, and which includes two surfaces joined at a common edge

EX2018 / IPR2022-00734 / Page 471 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

#	Claim Term	Claim Numbers	Plaintiffs' Proposed Construction and Evidence	Defendants' Proposed Construction and Evidence
			roof and which includes two surfaces joined at a common edge **Evidence** '376 at 12:1-12, 12:23-38, 12:66-13:39, 21:35- 48; Figs. 5A-5D	**Evidence** FIGS. 5A-5D; FIG. 6A-6D; FIG. 10; 2:64-3:23; 12:9-14:64; 21:13-22:18 Defendants may rely on expert testimony concerning the meaning of this term to a person of ordinary skill in the art in light of the disclosures of the patents-in-suit.

EX2018 / IPR2022-00734 / Page 472 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY
CAMDEN VICINAGE

EAGLE VIEW TECHNOLOGIES, INC., *et al.*, Plaintiffs, v. XACTWARE SOLUTIONS, INC., *et al.*, Defendants.	Civil Action No.: 1:15-cv-07025 (RMB-JS) **JURY INSTRUCTIONS**

TABLE OF CONTENTS

F–1 DUTY OF JURY

F–2 BURDENS OF PROOF

F-3 EVIDENCE

F-4 DIRECT AND CIRCUMSTANTIAL EVIDENCE

F–5 STIPULATION OF FACT

F-6 AUDIO/VIDEO RECORDINGS--TRANSCRIPTS

F-7 CREDIBILITY OF WITNESSES

F-8 OPINION TESTIMONY

F–9 SUMMARY OF CONTENTIONS

F–10 THE ROLE OF THE CLAIMS OF A PATENT

F–11 HOW A CLAIM DEFINES WHAT IT COVERS

F–12 INDEPENDENT AND DEPENDENT CLAIMS

F–13 CLAIM INTERPRETATION

F–14 INFRINGEMENT GENERALLY

F–15 DIRECT INFRINGEMENT

F–16 INDIRECT INFRINGEMENT—INDUCED INFRINGEMENT

F–17 INFRINGEMENT WHERE ONE OR MORE SYSTEM COMPONENTS ARE LOCATED OUTSIDE THE UNITED STATES

F–18 INFRINGEMENT THROUGH THE SUPPLY OF COMPONENTS IN OR FROM THE UNITED STATES FOR COMBINATION ABROAD UNDER 35 U.S.C. § 271(f)(1)

F–19 INFRINGEMENT THROUGH THE SUPPLY OF ONE COMPONENT IN OR FROM UNITED STATES FOR COMBINATION ABROAD UNDER 35 U.S.C. § 271(f)(2)

F–20 INFRINGEMENT BY IMPORT, SALE, OFFER FOR SALE OR USE OF PRODUCT MADE BY PATENTED PROCESS (§ 271(G))

F–21 INVALIDITY GENERALLY

F-22 INTER PARTES REVIEW PROCEEDINGS

F–23 ANTICIPATION

F–24 OBVIOUSNESS

F–25 PRIOR ART

F–26 PRIOR ART - INVENTION DATE

F–27 PRIOR ART - PRIOR PATENT

F–28 PRIOR ART - PRINTED PUBLICATION

F–29 DAMAGES GENERALLY

F–30 DATE DAMAGES BEGIN

F–31 KINDS OF DAMAGES THAT MAY BE RECOVERED

F–32 LOST PROFITS

F–33 REASONABLE ROYALTY

F–34 WILLFUL INFRINGEMENT

F–35 DELIBERATIONS

FINAL JURY INSTRUCTIONS

F–1 DUTY OF JURY

Members of the Jury: Now that you have heard all of the evidence it is my duty to instruct you as to the law of the case.

You must not infer from these instructions or from anything I may say or do as indicating that I have an opinion regarding the evidence or what your verdict should be.

It is your duty to find the facts from all the evidence in the case. To those facts you will apply the law as I give it to you. You must follow the law as I give it to you whether you agree with it or not. And you must not be influenced by any personal likes or dislikes, opinions, prejudices, or sympathy. That means that you must decide the case solely on the evidence before you. You will recall that you took an oath to do so.

In following my instructions, you must follow all of them and not single out some and ignore others; they are all important.

F–2 BURDENS OF PROOF

EagleView contends that Xactware and Verisk import, make, use, offer to sell, or sell a product that infringes claims in dispute of the asserted patents. EagleView must prove that Xactware and Verisk infringed one or more claims of the asserted patents by a preponderance of the evidence. That means that EagleView must show it is more likely that the accused products infringe than they do not infringe.

In this case, a patent claim can be infringed only if an accused product precisely satisfies all of the elements of the claim in the order listed in the claim. To determine infringement, you must compare the accused products with each claim from the accused products that EagleView asserts is infringed. It will be my job to tell you what the language of the patent claim means. You must follow my instructions as to the meaning of the patent claims, you are not to define the patent claims yourselves.

Xactware and Verisk deny that it is infringing the claims of the asserted patents, and contend that the asserted patents are invalid and/or are unenforceable. Invalidity of certain patent claims is a defense to infringement. Therefore, even though the patent examiner has allowed the claims of the asserted patent, you, the jury, must decide whether each claim of the asserted patents that is challenged by Xactware and Verisk is invalid. Xactware and Verisk must prove invalidity of each

challenged claim by clear and convincing evidence in order to overcome the presumption of validity.

Clear and convincing evidence means that it is highly probable that the fact is true. This standard is different from the standard that applies to other issues in this case that I've instructed you, such as infringement, may be found under a lower standard, namely by a preponderance of the evidence. You may think of this preponderance of the evidence as slightly greater than 50 percent. That's different from the criminal law standard of beyond a reasonable doubt. You may have heard of the term "proof beyond a reasonable doubt," but that is in a criminal case, so please put that out of your mind.

F-3 EVIDENCE

You must make your decision in this case based only on the evidence that you saw and heard in the courtroom. Do not let rumors, suspicions, or anything else that you may have seen or heard outside of court influence your decision in any way.

The evidence from which you are to find the facts consists of the following:

(1) The testimony of the witnesses;

(2) Documents and other things received as exhibits; and

(3) Any fact or testimony that was stipulated; that is, formally agreed to by the parties.

The following are not evidence:

(1) The Complaint;

(2) Statements and arguments of the lawyers for the parties in this case;

(3) Questions by the lawyers and questions that I might have asked;

(4) Objections by lawyers, including objections in which the lawyers stated facts;

(5) Any testimony I struck or told you to disregard; and

(6) Anything you may have seen or heard about this case outside the courtroom.

You should use your common sense in weighing the evidence. Consider it in light of your everyday experience with people and events, and give it whatever weight you believe it deserves. If your experience and common sense tells you that certain evidence reasonably leads to a conclusion, you may reach that conclusion.

As I told you in my preliminary instructions, the rules of evidence control what can be received into evidence. During the trial the lawyers objected when they thought that evidence was offered that was not permitted by the rules of evidence. These objections simply meant that the lawyers were asking me to decide whether the evidence should be allowed under the rules.

You should not be influenced by the fact that an objection was made. You should also not be influenced by my rulings on objections or any sidebar conferences you may have overheard. When I overruled an objection, the question was answered or the exhibit was received as evidence, and you should treat that testimony or exhibit like any other. When I allowed evidence (testimony or exhibits) for a limited purpose only, I instructed you to consider that evidence only for that limited purpose and you must do that.

When I sustained an objection, the question was not answered or the exhibit was not received as evidence. You must disregard the question or the exhibit entirely. Do not think about or guess what the witness might have said in answer to

the question; do not think about or guess what the exhibit might have shown. Sometimes a witness may have already answered before a lawyer objected or before I ruled on the objection. If that happened and if I sustained the objection, you must disregard the answer that was given.

Also, if I ordered that some testimony or other evidence be stricken or removed from the record, you must disregard that evidence. When you are deciding this case, you must not consider or be influenced in any way by the testimony or other evidence that I told you to disregard.

Although the lawyers may have called your attention to certain facts or factual conclusions that they thought were important, what the lawyers said is not evidence and is not binding on you. It is your own recollection and interpretation of the evidence that controls your decision in this case. Also, do not assume from anything I may have done or said during the trial that I have any opinion about any of the issues in this case or about what your verdict should be.

F-4 DIRECT AND CIRCUMSTANTIAL EVIDENCE

Two types of evidence have been used in this trial, "direct evidence" and "circumstantial (or indirect) evidence." You may use both types of evidence in reaching your verdict.

"Direct evidence" is simply evidence which, if believed, directly proves a fact. An example of "direct evidence" occurs when a witness testifies about something the witness knows from his or her own senses — something the witness has seen, touched, heard, or smelled.

"Circumstantial evidence" is evidence which, if believed, indirectly proves a fact. It is evidence that proves one or more facts from which you could reasonably find or infer the existence of some other fact or facts. A reasonable inference is simply a deduction or conclusion that reason, experience, and common sense lead you to make from the evidence. A reasonable inference is not a suspicion or a guess. It is a reasoned, logical decision to find that a disputed fact exists on the basis of another fact.

For example, if someone walked into the courtroom wearing a wet raincoat and carrying a wet umbrella, that would be circumstantial or indirect evidence from which you could reasonably find or conclude that it was raining. You would not have to find that it was raining, but you could.

Sometimes different inferences may be drawn from the same set of facts. The plaintiff may ask you to draw one inference, and the defense may ask you to draw another. You, and you alone, must decide what reasonable inferences you will draw based on all the evidence and your reason, experience and common sense.

You should consider all the evidence that is presented in this trial, direct and circumstantial. The law makes no distinction between the weight that you should give to either direct or circumstantial evidence. It is for you to decide how much weight to give any evidence.

F–5 STIPULATION OF FACT

The parties have stipulated that certain facts are true, and those stipulations have been given to you during this trial. You must therefore treat these facts as having been proved for the purposes of this case.

F-6 AUDIO/VIDEO RECORDINGS—TRANSCRIPTS

You have heard audio and video recordings that were received in evidence, and you were given written transcripts of the recordings.

Keep in mind that the transcripts are not evidence. They were given to you only as a guide to help you follow what was being said. The recordings themselves are the evidence. If you noticed any differences between what you heard on the recordings and what you read in the transcripts, you must rely on what you heard, not what you read. And if you could not hear or understand certain parts of the recordings you must ignore the transcripts as far as those parts are concerned.

F-7 CREDIBILITY OF WITNESSES

In deciding what the facts are, you may have to decide what testimony you believe and what testimony you do not believe. You are the sole judges of the credibility of the witnesses. "Credibility" means whether a witness is worthy of belief. You may believe everything a witness says or only part of it or none of it. In deciding what to believe, you may consider a number of factors, including the following:

(1) the opportunity and ability of the witness to see or hear or know the things the witness testifies to;

(2) the quality of the witness's understanding and memory;

(3) the witness's manner while testifying;

(4) whether the witness has an interest in the outcome of the case or any motive, bias or prejudice;

(5) whether the witness is contradicted by anything the witness said or wrote before trial or by other evidence;

(6) how reasonable the witness's testimony is when considered in the light of other evidence that you believe; and

(7) any other factors that bear on believability.

F-8 OPINION TESTIMONY

You have heard testimony containing opinions from Robert Stevenson, Jonathan Arnold, Joseph Mundy, and Philip Green. In weighing this opinion testimony, you may consider their qualifications, the reasons for their opinions, and the reliability of the information supporting those opinions, as well as the factors I have previously mentioned for weighing the testimony of any other witness. The opinion of these witnesses should receive whatever weight and credit, if any, you think appropriate, given all the other evidence in the case.

In deciding whether to accept or rely upon the opinions of Robert Stevenson, Jonathan Arnold, Joseph Mundy, and Philip Green, you may consider any bias that these witnesses may have, including any bias that may arise from evidence that these witnesses have been or will be paid for reviewing the case and testifying.

F–9 SUMMARY OF CONTENTIONS

As I did at the start of the case, I will first give you a summary of each party's contentions in this case. I will then tell you what each party must prove to win on each of its contentions. As I previously told you, the case involves five United States patents owned by EagleView. The patents involved in this case are as follows:

- U.S. Patent No. 8,078,436 (the "'436 patent"),
- U.S. Patent No. 8,170,840 (the "'840 patent"),
- U.S. Patent No. 9,129,376 (the "'376 patent"),
- U.S. Patent No. 8,825,454 (the "'454 patent"), and
- U.S. Patent No. 8,818,770 (the "'770 patent").

These patents are collectively referred to as the "Asserted Patents" or the "EagleView Patents."

As I told you before, EagleView contends that Xactware and Verisk infringe the Asserted Patents. EagleView further contends the infringement was willful. EagleView seeks damages sufficient to compensate it for Xactware's and Verisk's alleged infringement. The specific patent claims alleged by EagleView to be infringed are referred to as the "Asserted Claims" of the Asserted Patents. The Asserted Claims are: Claims 2 and 36 of the '436 patent, Claim 10 of the '840 patent, Claim 12 of the '770 patent, Claim 26 of the '454 patent, and Claim 20 of the '376 patent. These claims may be referred to as the "Asserted Claims" of the Asserted

Patents. EagleView also argues that Xactware and Verisk have actively induced others to infringe the Asserted Claims. I will explain the requirements of each of these types of infringement later.

Xactware and Verisk deny that they have infringed or are otherwise liable for infringement of the Asserted Claims and also argue that the Asserted Claims are invalid. Each asserted claim must be considered individually. In general, a patent claim is not infringed if an Accused Product fails to meet even one of the requirements of the patent claim. Also, in general, a patent claim is invalid if it is not new or is obvious in view of the state of the art at the relevant time, or does not meet other requirements for patent protection.

The Xactware and Verisk systems, products, and processes that are accused of infringement in this case are: for the '436 Patent: Xactimate, Property Insight or Roof InSight, and the "Mass Production Tool"; and for the '840, '376, '454, and '770 patents: (1) Xactimate and Aerial Sketch Version 2, and (2) Xactimate, Property Insight or Roof InSight, and the "Mass Production Tool." These are called "the Accused Products" in this case. The Accused Products are alleged to infringe the Asserted Claims of the Asserted Patents.

Your job is to decide whether or not the Asserted Claims have been infringed and whether or not those claims are invalid. If you decide that at least one Asserted

Claim is infringed and is not invalid, you then need to decide any money damages to be awarded to EagleView to compensate it for the infringement. You also need to make a finding as to whether the infringement was willful. If you decide that any infringement was willful, that decision should not affect any damages award you give. I will take willfulness into account later.

As I told you before, you may have heard references to a company called Geomni. "Xactware" and "Geomni" refer to the same company. All references to Xactware apply equally to Geomni, and all references to Geomni apply equally to Xactware. For example, whenever you see references to Xactware's products called "Roof Insight" or "Property Insight" you should consider those references to apply equally to Geomni's products called "Geomni Roof" and "Geomni Property," respectively.

F–10 THE ROLE OF THE CLAIMS OF A PATENT

Before you can decide many of the issues in this case, you will need to understand the role of patent "claims." The patent claims are the numbered sentences at the end of each patent. The claims are important because it is the words of the claims that define what a patent covers. The figures and text in the rest of the patent provide a description and/or examples of the invention and provide a context for the claims, but it is the claims that define the breadth of the patent's coverage. Each claim is effectively treated as if it were a separate patent, and each claim may cover more or less than another claim. Therefore, what a patent covers depends, in turn, on what each of its claims covers.

You will first need to understand what each claim covers in order to decide whether or not there is infringement of the claim and to decide whether or not the claim is invalid. The law says that it is my role to define the terms of the claims and it is your role to apply my definitions to the issues that you are asked to decide in this case. Therefore, as I explained to you at the start of the case, I have determined the meaning of the claims and I will provide to you my definitions of certain claim terms. You must accept my definitions of these words in the claims as being correct. It is your job to take these definitions and apply them to the issues that you are deciding, including the issues of infringement and validity.

F–11 HOW A CLAIM DEFINES WHAT IT COVERS

I will now explain how a claim defines what it covers.

A claim sets forth, in words, a set of requirements. Each claim sets forth its requirements in a single sentence. If a device or a method satisfies each of these requirements, then it is covered by the claim.

There can be several claims in a patent. A claim may be narrower or broader than another claim by setting forth more or fewer requirements. The coverage of a patent is assessed claim-by-claim. In patent law, the requirements of a claim are often referred to as "claim elements" or "claim limitations." When a thing (such as a product or a process) meets all of the requirements of a claim, the claim is said to "cover" that thing, and that thing is said to "fall" within the scope of that claim. In other words, a claim covers a product or process where each of the claim elements or limitations is present in that product or process.

Sometimes the words in a patent claim are difficult to understand, and therefore it is difficult to understand what requirements these words impose. It is my job to explain to you the meaning of the words in the claims and the requirements these words impose.

By understanding the meaning of the words in a claim and by understanding that the words in a claim set forth the requirements that a product or process must meet in order to be covered by that claim, you will be able to understand the scope

of coverage for each claim. Once you understand what each claim covers, then you are prepared to decide the issues that you will be asked to decide, such as infringement and invalidity.

F–12 INDEPENDENT AND DEPENDENT CLAIMS

This case involves two types of patent claims: independent claims and dependent claims. An "independent claim" sets forth all of the requirements that must be met in order to be covered by that claim. Thus, it is not necessary to look at any other claim to determine what an independent claim covers. In this case, the following asserted claims are independent claims:

- Claim 36 of the '436 patent;
- Claim 10 of the '840 patent;
- Claim 20 of the '376 patent; and
- Claim 26 of the '454 patent.

The remainder of the asserted claims are "dependent claims." A dependent claim does not itself recite all of the requirements of the claim but refers to another claim for some of its requirements. In this way, the claim "depends" on another claim. A dependent claim incorporates all of the requirements of the claim(s) to which it refers. The dependent claim then adds its own additional requirements. To determine what a dependent claim covers, it is necessary to look at both the dependent claim and any other claim(s) to which it refers. A product that meets all of the requirements of both the dependent claim and the claim(s) to which it refers is covered by that dependent claim.

In this case, the following asserted claims are dependent claims:

- Claim 2 of the ’436 patent, which is dependent on a claim that is not asserted in this case -- independent claim 1 of the ‘436 patent; and
- Claim 12 of the ‘770 patent, which is dependent on a claim that is not asserted in this case -- independent claim 1 of the ‘770 patent.

F–13 CLAIM INTERPRETATION

I will now explain to you the meaning of some of the words of the claims in this case. In doing so, I will explain some of the requirements of the claims. As I have previously instructed you, you must accept my definition of these words in the claims as correct. For any words in the claim for which I have not provided you with a definition, you should apply the plain and ordinary meanings of those words. You should not take my definition of the language of the claims as an indication that I have a view regarding how you should decide the issues that you are being asked to decide, such as infringement or validity. These issues are yours to decide.

I instruct you that the following claim terms have the following definitions:

- "a module" means: "one or more modules;"
- "a memory" means: "one or more memories;"
- "top plan view" in the '436 patent means: "an aerial view of an object that is taken from a position vertically or nearly vertically above the object;"
- "oblique perspective view" and "oblique view" and "perspective view" mean: "an aerial view of an object that is taken from a position that is neither vertically nor nearly vertically above the object;"
- "not a stereoscopic pair" means: "a pair of images of the same object taken from different view directions;"
- "a roof estimation module that is stored on the memory" means: "a module that is stored on the memory, and which performs image acquisition, roof modeling, and report generation functions;" and
- "aerial image" means: "an image taken from the air."

- The claims of the patents-in-suit do not exclude a system that is distributed among multiple computers or locations.
- The claims of the patents-in-suit do not exclude the use of metadata.
- The claims of the patents-in-suit do not exclude the use of a wireframe as a type of the claimed pitch determination marker.
- The claims of the patents-in-suit do not exclude the use of primitives.
- The claims of the patents-in-suit do not require simultaneous display of a first line drawing on a first aerial image and a second line drawing on a second aerial image.

F–14 INFRINGEMENT GENERALLY

I will now instruct you as to the rules you must follow when deciding whether EagleView has proven that Xactware or Verisk infringed any of the Asserted Claims.

Patent law gives the owner of a valid patent the right to exclude others from importing, making, using, offering to sell, or selling the claimed invention within the United States during the term of the patent. Any person or business entity that has engaged in any of those acts without the patent owner's permission infringes the patent. Here, EagleView alleges that the Accused Products infringe the Asserted Claims.

You have heard evidence about both EagleView's commercial products and Xactware's and/or Verisk's accused products. However, in deciding the issue of infringement you may not compare Xactware's or Verisk's accused products to EagleView's commercial products. Rather, you must compare Xactware's or Verisk's accused products only to the six Asserted Claims when making your decision regarding infringement.

A claim of a patent may be infringed directly or indirectly. As explained further in the following Instructions, direct infringement results if an Accused Product is covered by at least one Asserted Claim. Indirect infringement results if the defendant induces another to infringe a claim of a patent.

There are several different ways in which Xactware and Verisk have been alleged to infringe. I will now explain each of these types of infringement in more detail.

F–15 DIRECT INFRINGEMENT

EagleView asserts that Xactware has directly infringed the Asserted Patents. Xactware is liable for directly infringing EagleView's patents only if you find that EagleView has proven that it is more likely than not that Xactware made, used, imported, offered to sell, or sold the invention defined in at least one claim of EagleView's patent.

A party can directly infringe a patent without knowing of the patent or without knowing that what the party is doing is patent infringement. A patent's claims define what is covered by the patent. A product directly infringes a patent if it is covered by at least one claim of the patent.

To determine direct infringement, you must compare the Accused Products with each patent claim EagleView asserts is infringed, using my instructions as to the meaning of the terms the patent claims use.

A patent claim is literally infringed only if an Accused Product satisfies each and every requirement in that patent claim. If an Accused Product does not contain one or more elements or method steps recited in a claim, the Accused Product does not literally infringe that claim.

You must determine direct infringement with respect to each patent claim separately.

The Accused Products should be compared to the invention described in each patent claim it is alleged to infringe. The same element of the accused system, product, or process may satisfy more than one element of a patent claim.

F–16 INDIRECT INFRINGEMENT—INDUCED INFRINGEMENT

Xactware and Verisk are also accused of actively inducing infringement of the Asserted Claims. To find that Xactware and/or Verisk actively induced infringement, EagleView must prove by a preponderance of the evidence that (1) a single actor (which can be a corporation or organization, or its various employees taken together) is responsible for direct infringement, namely, all of the components or method steps of the products or methods accused of infringing the patent, and (2) Xactware and/or Verisk actively induced these acts of infringement.

To prove active inducement, EagleView must establish that it is more likely than not that:

1. Xactware and/or Verisk aided, instructed, or otherwise acted with the intent to cause acts that would constitute direct infringement of the patent;
2. Xactware and/or Verisk knew of the patent, or showed willful blindness to the existence of the patent at that time;
3. Xactware and/or Verisk knew, or showed willful blindness, that these acts would infringe at least one Asserted Claim of the patent; and
4. These acts infringed at least one Asserted Claim of the patent.

To find willful blindness, (1) Xactware and/or Verisk must have subjectively believed that there was a high probability that a patent existed covering the Accused Products, and (2) Xactware and/or Verisk must have taken deliberate actions to avoid learning of the patent.

F–17 INFRINGEMENT WHERE ONE OR MORE SYSTEM COMPONENTS ARE LOCATED OUTSIDE THE UNITED STATES

The following instruction applies only to EagleView's assertions that the system claims are infringed by Xactimate, Property Insight or Roof InSight, and the "Mass Production Tool". The system claims are: claims 2 and 36 of the '436 patent, claim 10 of the '840 patent, and claim 20 of the '376 patent.

Direct infringement requires that the accused system include every element recited in the claim. EagleView claims that infringement occurred within the United States even if some (but not all) of the elements of the claim were located outside of the United States.

For infringement to occur within the United States, EagleView must prove by a preponderance of the evidence that the control of the system was exercised and the benefit of the system was enjoyed in the United States.

F–18 INFRINGEMENT THROUGH THE SUPPLY OF COMPONENTS IN OR FROM THE UNITED STATES FOR COMBINATION ABROAD UNDER 35 U.S.C. § 271(F)(1)

Xactware is liable for § 271(f)(1) infringement of a claim (active inducement of foreign combination of components supplied from the United States) if EagleView proves by a preponderance of the evidence that:

1. Xactware supplies, or causes to be supplied, components from the United States to a place outside the United States, which make up all or a substantial portion of the invention of any one of the Asserted Claims;

2. Xactware takes action intentionally to cause another party to assemble the components outside of the United States;

3. Xactware knows of the Accused Patents, and knows that the encouraged acts constitute infringement of the Accused Patents; and

4. The encouraged acts would constitute direct infringement of the Asserted Claims if they had been carried out in the United States.

In order to establish active inducement of infringement, it is not sufficient that an alleged direct infringer itself allegedly directly infringes the claim. Nor is it sufficient that Xactware was aware of the acts that allegedly constitute the direct infringement. Rather, you must find that Xactware specifically intended for the allegedly direct infringer to infringe the Accused Patents, in order to find inducement of infringement. If you do not find that Xactware specifically intended to infringe,

then you must find that Xactware has not actively induced the alleged infringement under § 271(f)(1).

F–19 INFRINGEMENT THROUGH THE SUPPLY OF ONE COMPONENT IN OR FROM UNITED STATES FOR COMBINATION ABROAD UNDER 35 U.S.C. § 271(F)(2)

Xactware is also liable for § 271(f)(2) infringement of a claim if EagleView proves by a preponderance of the evidence that:

1. Xactware supplies a component, or causes a component to be supplied, from the United States to a place outside of the United States;

2. The only substantial use for the component is in a product or process that would infringe if the combination had occurred in the United States;

3. Xactware is aware of the Asserted Patents and knows that the component has no other substantial use and may be covered by a claim of the Asserted Patent; and

4. Xactware intends for the component to be used in a product that would directly infringe the Accused Claims if it has been used in the United States.

F–20 INFRINGEMENT BY IMPORT, SALE, OFFER FOR SALE OR USE OF PRODUCT MADE BY PATENTED PROCESS (§ 271(G))

Xactware is liable for direct infringement of a claim if EagleView proves that Xactware, without EagleView's authorization, imports, offers to sell, sells, or uses within the United States a product which was made outside of the United States during the time the Asserted Patents were in force by a process that, if performed in the United States, would infringe the claim. However, if the product has been materially changed by an additional process or the product has become a trivial and nonessential component of another product, you must find Xactware did not infringe the Asserted Patents.

F–21 INVALIDITY GENERALLY

I will now instruct you on the rules you must follow in deciding whether or not Xactware and Verisk have proven that the Asserted Claims are invalid. To prove that any claim of a patent is invalid, Xactware or Verisk must persuade you by clear and convincing evidence, i.e., you must be left with a clear conviction that the claim is invalid.

F-22 INTER PARTES REVIEW

You have heard testimony about Inter Partes review proceedings that sometimes were referred to as "IPR" proceedings. These proceedings were introduced into evidence for the sole purpose of determining validity or invalidity of the patents in this case.

I instruct you that as a matter of law the decisions in any IPR proceedings are not binding on you with regard to the validity or invalidity of any of the patents in this case. You may give these decisions any weight you decide.

It is your role, and you role alone, in this case to determine whether any of the patents are valid or invalid based upon all of the evidence that was presented during this trial.

F–23 ANTICIPATION

In this case, Xactware and Verisk contend that some of the Asserted Patents are anticipated. Xactware and Verisk contend that Claim 10 of the ’840 patent and Claim 20 of the ’376 patent are invalid because the claimed inventions are anticipated.

You must determine what is the prior art (as that term will be defined for you) that may be considered in determining whether Claim 10 of the ’840 patent and Claim 20 of the ’376 patent are new or anticipated. There are different types of prior art and I will instruct you on each of the relevant types of prior art that you will need to consider.

To anticipate a claim, each element in the claim must be present in a single item of prior art and arranged or combined in the same way as recited in the claim. You may not combine two or more items of prior art to find anticipation. In determining whether every one of the elements of the claimed invention is found in the prior reference, you should consider what a person of ordinary skill in the art would have understood from his or her review of the particular reference.

F–24 OBVIOUSNESS

Xactware and Verisk also contend that each of the Asserted Claims is invalid because the claimed inventions are "obvious."

Even though an invention may not have been identically disclosed or described before it was made by an inventor, in order to be patentable, the invention must also not have been obvious to a person of ordinary skill in the field of technology of the patent at the time the invention was made.

Xactware and Verisk may establish that a patent claim is invalid by showing, by clear and convincing evidence, that the claimed invention would have been obvious to persons having ordinary skill in the art at the time the invention was made in the field of the invention.

In determining whether a claimed invention is obvious, you must consider the level of ordinary skill in the field of the invention that someone would have had at the time the invention was made, the scope and content of the prior art, and any differences between the prior art and the claimed invention.

Keep in mind that the existence of each and every element of the claimed invention in the prior art does not necessarily prove obviousness. Most, if not all, inventions rely on building blocks of prior art.

In considering whether a claimed invention is obvious, you may but are not required to find obviousness if you find that at the time of the claimed invention

there was a reason that would have prompted a person having ordinary skill in the field of the invention to combine the known elements in a way the claimed invention does, taking into account such factors as (1) whether the claimed invention was merely the predictable result of using prior art elements according to their known functions; (2) whether the claimed invention provides an obvious solution to a known problem in the relevant field; (3) whether the prior art teaches or suggests the desirability of combining elements claimed in the invention; (4) whether the prior art teaches away from combining elements in the claimed invention; (5) whether it would have been obvious to try the combinations of elements, such as when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions; and (6) whether the change resulted more from design incentives or other market forces. To find it rendered the invention obvious, you must find that the prior art provided a reasonable expectation of success. Obvious to try is not sufficient in unpredictable technologies.

In determining whether the claimed invention was obvious, consider each claim separately. Do not use hindsight, that is, consider only what was known at the time of the invention.

In making these assessments, you should take into account any objective evidence (sometimes called "secondary considerations") that may shed light on the obviousness or not of the claimed invention, such as:

a. Whether the invention was commercially successful as a result of the patents in suit (sometimes referred to as a nexus);

b. Whether the invention satisfied a long-felt need;

c. Whether others had tried and failed to make the invention;

d. Whether others invented the invention at roughly the same time;

e. Whether others copied the invention;

f. Whether there were changes or related technologies or market needs contemporaneous with the invention;

g. Whether the invention achieved unexpected results;

h. Whether others in the field praised the invention;

i. Whether persons having ordinary skill in the art of the invention expressed surprise or disbelief regarding the invention;

j. Whether others sought or obtained rights to the patent from the patent holder; and

k. Whether the inventor proceeded contrary to accepted wisdom in the field.

Not all of these factors may be present. No single factor is more or less important than the others.

To rely on objective evidence, EagleView must show that there is a connection, otherwise referred to as a nexus, between that evidence and the merits of the claimed invention.

F–25 PRIOR ART

Prior art may include references, such as publications or patents, that disclose the claimed invention or elements of the claimed invention. To be prior art, the reference must have been published and publicly available or patented either before the invention was made or more than one year before the filing date of the patent application.

F–26 PRIOR ART - INVENTION DATE

In this case, you must determine the date of invention for the claimed invention. The date of the invention is the earlier of either when the invention was reduced to practice or when it was conceived, provided the inventors were diligent in reducing the invention to practice. Diligence means working continuously, though not necessarily every day. Conception is the mental part of an inventive act, i.e., the formation in the mind of the inventor of a definite and permanent idea of the complete and operative invention as it is thereafter to be applied in practice, even if the inventor did not know at the time that the invention would work. Conception of an invention is complete when the idea is so clearly defined in the inventor's mind that, if the idea were communicated to a person having ordinary skill in the field of the technology, he or she would be able to reduce the invention to practice without undue research or experimentation. This requirement does not mean that the inventor has to have a prototype built, or actually explained her or his invention to another person. But, there must be some evidence beyond the inventor's own testimony that confirms the date on which the inventor had the complete idea. Conception may be proven when the invention is shown in its complete form by drawings, disclosure to another person, or other forms of evidence presented at trial.

A claimed invention is "reduced to practice" when it has been constructed/used/tested sufficiently to show that it will work for its intended purpose

or when the inventor files a patent application. An invention may also be reduced to practice even if the inventor has not made or tested a prototype of the invention, if it has been fully described in a filed patent application.

F–27 PRIOR ART - PRIOR PATENT

You heard testimony about alleged prior art, including the Sungevity patent, Ex. DTX-470. Xactware and Verisk contend that Sungevity is prior art to the '436, '840, and '376 patents. EagleView contends that Sungevity is not prior art to those patents.

Xactware and Verisk have the initial burden to show that Sungevity is prior art. Because the filing date of Sungevity is after the filing date of these patents, Xactware and Verisk must show that Sungevity is entitled to claim priority to an application filed before the filing dates of the '436, '840, and '376 patents. In so doing, Xactware and Verisk may rely on the legal presumption that issued patents are valid. If you determine that Xactware and Verisk have successfully done so, then the burden shifts to EagleView to show by clear and convincing evidence that the Asserted Claims of the '436, '840, and '376 patents are entitled to a date earlier than the filing date of the earliest application to which Sungevity is entitled to claim priority. EagleView may do so by showing either (i) that the date of invention of its claims predates the filing of the earliest application to which Sungevity is entitled to claim priority, or (ii) that EagleView's claims are entitled to an effective filing date that predates the filing of the earliest application for Sungevity.

For purposes of determining the date of invention, as I previously explained, the invention date is the earlier of either (i) the date when the invention was reduced to practice, meaning constructed/used/tested sufficiently to show that it will work for its intended purpose, or when the inventor files a patent application, or (ii) the date when the invention was conceived, provided the inventor was diligent in reducing the invention to practice.

For purposes of determining whether a patent is entitled to claim priority to an earlier application, that earlier application must disclose the claimed invention in accordance with certain requirements. To do so, the party claiming priority to the earlier application must show that the earlier-filed patent application contains certain information regarding the claims of that patent. Specifically, the party must show that the earlier-filed application contains sufficient written description that supports the claims of the patent and that would enable a person having ordinary skill in the field of the technology of the patent to make and use the full scope of the asserted claims. These requirements are known as, respectively, the written description and enablement requirements.

In deciding whether an earlier-filed patent application satisfies the written description requirement, you must consider the description of that application from the viewpoint of a person having ordinary skill in the field of technology of the later-

filed application when that application was filed. The written description requirement is satisfied if a person having ordinary skill reading the earlier-filed patent application would have recognized that it describes the full scope of the claimed invention as it is finally claimed in the later-filed application and that the inventor actually possessed that full scope by the filing date of the earlier-filed application. The written description requirement may be satisfied by a combination of the words, structures, figures, diagrams, formulas, etc., contained in the patent application. The full scope of a claim or any particular requirement in a claim need not be expressly disclosed in the original patent application if a person having ordinary skill in the field of technology of the later-filed application at the time of filing would have understood that the full scope or missing requirement is in the written description in the patent application.

In deciding whether an earlier-filed patent application satisfies the enablement requirement, you should consider whether the application contains a sufficiently full and clear description of how to make and use the full scope of the claimed invention of the claims of the later-filed application. To be sufficiently full and clear, the description must contain enough information to have allowed a person having ordinary skill in the field of technology of the later-filed application to make and use

the full scope of the claimed invention at the time of the earlier-filed patent application was filed.

In order to be enabling, the earlier-filed patent application must permit persons having ordinary skill in the field of technology of the later-filed application to make and use the full scope of the claimed invention of the later-filed application's claim in question at the time of the applications filing without having to conduct undue experimentation. However, some amount of experimentation to make and use the invention is allowable. In deciding whether a person having ordinary skill would have to experiment unduly in order to make and use the invention, you may consider several factors:

(1) the time and cost of any necessary experimentation;
(2) how routine any necessary experimentation is in the field of the later-filed application;
(3) whether the application discloses specific working examples of the claimed invention;
(4) the amount of guidance presented in the application;
(5) the nature and predictability of the field of the later-filed application;
(6) the level of ordinary skill in the field of the later-filed application; and
(7) the scope of the claimed invention.

No one or more of these factors is alone dispositive. Rather, you must make your decision whether or not the degree of experimentation requires is undue based upon all of the evidence presented to you. You should weigh these factors and determine whether or not, in the context of the invention and the state of the art at

the time of the earlier-filed application, a person having ordinary skill would need to experiment unduly to make and use the full scope of the claimed invention of the later-filed application claim at issue.

F–28 PRIOR ART - PRINTED PUBLICATION

The parties dispute whether Hsieh, Applicad, Avrahami, and Labe are printed publications and therefore whether they are prior art. Xactware and Verisk contend that these materials are printed publications, and that the Asserted Claims of the Asserted Patents are invalid in light of the disclosures in these materials.

These references qualify as printed publications if, before the invention by the applicant, or more than one year before the date of the application for a patent in the United States, they were maintained in some tangible form, such as printed pages, electronic file, microfilm, photographs, Internet publication, or photocopies, and were sufficiently publicly accessible to persons interested in the subject matter of their contents. Information is sufficiently publicly accessible if it was distributed or otherwise made available such that persons interested and ordinarily skilled in the subject matter exercising reasonable diligence can or could locate it. It is not necessary for the printed publication to have been available to every member of the public or to actually have been accessed. However, public accessibility requires more than mere accessibility. It must have been sufficiently accessible to the public. An issued patent is a printed publication. A published patent application is a printed publication as of its publication date.

F–29 DAMAGES GENERALLY

If you find that the Accused Products infringe any Asserted Claim of the Asserted Patents, and that those claims are not invalid, you must determine what amount of damages to award to EagleView for the infringement. On the other hand, if you find that each of the Asserted Claims is not infringed or is invalid, then you should not consider damages in your deliberations.

EagleView must prove each element of its damages claim—including the amount of the damages—by a preponderance of the evidence. Preponderance of the evidence means more likely than not.

If proven by EagleView, damages must be adequate to compensate EagleView for the infringement. The purpose of a damage award is to put EagleView in about the same financial position it would have been in if the infringement had not happened. They are not meant to punish an infringer. You may not add anything to the amount of damages to punish an accused infringer or to set an example.

The fact that I am instructing you on damages does not mean that the Court believes that one party or the other should win the case. My Instructions about damages are for your guidance only in the event you find in favor of EagleView. You will need to address damages only if you find that one or more of the Asserted Claims is infringed and that it is not invalid.

EagleView need not prove the amount of damages with mathematical precision, but it must prove the amount of damages with reasonable certainty.

There are different types of damages that EagleView may be entitled to recover if you find that EagleView has proven infringement. In this case, EagleView seeks either lost profits, which includes lost sales and price erosion, or a reasonable royalty. EagleView may recover either lost profits or a reasonable royalty, but not both. In no event can your damage award be less than a reasonable royalty.

I will give more detailed instructions regarding damages shortly.

F–30 DATE DAMAGES BEGIN

In determining the amount of damages, you must determine when the damages began. Damages commence on the date that Xactware and/or Verisk have both infringed and been notified of the alleged infringement of the Asserted Patents. It is up to you to determine what that date is.

The date that EagleView first notified Xactware or Verisk of its claim for patent infringement is the date for the start of damages for that defendant. The parties do not agree on that date, and it is up to you to determine what that date is.

EagleView must prove that it is more likely than not that Xactware and Verisk were put on notice of the claim for patent infringement as of the date alleged by EagleView. EagleView can give notice in either of two ways. The first way is to give notice to the public in general. EagleView can do this by marking substantially all products it sold which included the patented invention, or by including on the labeling of substantially all products the word “patent” or the abbreviation “PAT” with the number of the patent. EagleView also may give notice by marking substantially all products with “Patent” or “Pat” and a free internet address where there is a posting that connects the product with the patent number. This type of notice to the public in general starts from the date EagleView began to mark substantially all of its products that use the invention with the patent number.

EagleView contends that damages begin on the date of first infringement, which is May 1, 2012, the date that the ’840 patent issued. Xactware and Verisk contend that the date for damages for each patent begins no earlier than the date that patent issued in its current form. Specifically, Xactware and Verisk contend that damages, if there are any, begin as follows for each of the Asserted Patents:

- ’840 Patent: May 1, 2012
- ’770 Patent: August 26, 2014
- ’436 Patent: August 27, 2014
- ’454 Patent: September 2, 2015
- ’376 Patent: September 8, 2015

A second way EagleView can give notice of its patents is to directly notify Defendants that Defendants’ allegedly infringing product infringed an Asserted Patent. This type of notice starts from the date the Defendants received the notice. If you find that EagleView, before filing this lawsuit, did not provide notice as set forth above, then EagleView can only recover damages for infringement that occurred after it sued the Defendants on September 23, 2015.

F–31 KINDS OF DAMAGES THAT MAY BE RECOVERED

There are several kinds of damages that are available for patent infringement.

One kind of damages is lost profits, that is, the additional profits that the patentee would have made if the defendant had not infringed. You may hear this referred to as the "but for" test—which means, "what profits would the patent owner have made 'but for' the alleged infringement?" Lost profits can include not only the profits the patentee would have made on sales lost due to the infringement, but also, under certain circumstances, profits that the patentee lost from being forced to reduce its price for its product or other related products to compete.

Another kind of patent damages is a reasonable royalty. A reasonable royalty is the amount that someone wanting to use the patented invention would have agreed to pay to the patent owner and the patent owner would have accepted. A reasonable royalty is the minimum amount of damages that a patent owner can receive for an infringement.

F–32 LOST PROFITS

In this case, EagleView seeks to recover lost profits damages. EagleView seeks both lost sales and price erosion as lost profits.

To prove lost profits, EagleView must show that, but for the alleged infringement, EagleView would have made additional profits through the sale of all or a portion of sales of infringing products made by Xactware. EagleView must prove this by a preponderance of the evidence, more likely than not. Part of your job is to determine what the parties who purchased the allegedly infringing product from Xactware would have done if the alleged infringement had not occurred. It is important to remember that the profits I have been referring to are the profits allegedly lost by EagleView, not the profits, if any, made by Xactware on the allegedly infringing sales.

EagleView has proven its lost profits if you find lost profits if you find that EagleView has proven each of the following factors by the more likely than not standard:

1. the demand for the patented product;

2. absence of acceptable non-infringing substitutes;

3. that EagleView had the manufacturing and marketing ability to make all or a part of the infringing sales actually made by Xactware; and

4. the amount of profit that EagleView would have made if it were not for Xactware or Verisk's respective infringement.

I will now explain each of these factors.

DEMAND FOR THE PATENTED PRODUCT

The first factor asks whether there was demand for the patented product in the relevant market.

EagleView can prove demand for the patented product by showing significant sales of EagleView's own patented product. EagleView also can prove demand for the patented product by showing significant sales of Xactware's or Verisk's product that are covered by one or more of the Asserted Claims of the Asserted Patents.

ACCEPTABLE NON-INFRINGING SUBSTITUTES

The second factor asks whether there were non-infringing, acceptable substitutes for EagleView's product that competed with Xactware or Verisk's infringing products in the marketplace and the impact of such substitutes on the marketplace absent the sale of Xactware or Verisk's products. If the realities of the marketplace are that competitors other than EagleView would likely have captured some or all of the sales made by Xactware or Verisk, even despite a difference in the products, then EagleView is not entitled to lost profits on those sales.

To be an acceptable substitute, the product must have had one or more of the advantages of the patented invention that were important to the actual buyers of the infringing products, not the public in general. The acceptable substitutes also must not infringe the patent because they were licensed under the patent or they did not include all of the features required by the patent. A non-infringing substitute may be one that involves the modification of the infringing product to avoid infringement or the removal of at least one feature of the invention from the product.

The acceptable substitutes, in addition to being either licensed or non-infringing, must have been available during the damages period. The acceptable substitute need not have actually been sold at that time. But, if the acceptable substitute was not sold during the damages period, then Xactware or Verisk must show by a preponderance of the evidence that, during the damages period, a competitor or Xactware or Verisk had all the necessary equipment, materials, know-how, and experience to design and manufacture the acceptable substitute. If you determine that some of Xactware's or Verisk's customers would just as likely have purchased an acceptable non-infringing substitute, then EagleView has not shown it lost those sales but for Xactware or Verisk's sales.

Even if you find that EagleView's and Xactware's or Verisk's products were the only ones with the advantages of the patented invention, EagleView is

nonetheless required to prove to you that it, in fact, would have made Xactware's or Verisk's infringing sales.

MARKET SHARE

If you find that there were other acceptable, non-infringing substitutes in the market, then EagleView may be entitled to lost profits on a portion of Xactware's or Verisk's infringing sales. The burden is on EagleView to prove that it is more likely than not that its product competed in the same market as Xactware's infringing product, and that EagleView would have made a portion of the infringing sales equal to at least EagleView's share of that market but for Xactware's or Verisk's infringement. It is not necessary for EagleView to prove that EagleView and Xactware and/or Verisk were the only two suppliers in the market for EagleView to demonstrate entitlement to lost profits. The burden is on EagleView, however, to show that it is more likely than not that it would have sold that portion had Xactware and/or Verisk's product never existed.

CAPACITY

The third factor asks whether EagleView had the manufacturing and marketing ability to actually make the sales it allegedly lost due to Xactware's or Verisk's infringement. EagleView must prove that it could have supplied the additional products needed to make the sales EagleView said it lost, or that someone

working with EagleView could have supplied the additional products. EagleView also must prove that it more likely than not had the ability to market and sell these additional products.

AMOUNT OF LOST SALES

EagleView may calculate the amount of its lost profits on lost sales by computing the lost revenue for sales it claims it would have made but for the infringement and subtracting from that amount any additional costs or expenses that EagleView would have had to pay to make the lost sales. This might include additional costs for making the products, additional sales costs, additional packaging costs, additional shipping costs, etc. Any costs that do not change when more products are made, such as taxes, insurance, rent, and administrative overhead, should not be subtracted from the lost sales amount. The amount of lost profits cannot be speculative, but it need not be proven with unerring certainty.

PRICE EROSION

EagleView is entitled to recover additional damages if it can show that it is more likely than not that, but for Xactware or Verisk's infringement, EagleView would have been able to charge higher prices for its products. If you find that EagleView has met its burden of proof, then you may award as additional damages an amount equal to the difference between the profits that EagleView would have

made at the higher price and the profits EagleView actually made selling its products at the lower price that EagleView charged. This type of damage is referred to as "price erosion damages."

If you find that EagleView suffered price erosion damages, then you also may use the higher price that EagleView would have charged in determining EagleView's lost sales and lost profits due to Xactware or Verisk's infringement. However, if you calculate price erosion damages using the higher price for the patented product, then you also must take into account any decrease in EagleView's sales that might have occurred due to the higher price for the products. This is known as "price elasticity."

In order to award damages based on price erosion, it is not required that EagleView knew that Xactware's or Verisk's competing product infringed the patent, if EagleView reduced its price to meet Xactware or Verisk's prices.

F–33 REASONABLE ROYALTY

If you find that EagleView has not proven its claim for lost profits, or if you find that EagleView has proven its claim for lost profits for only a portion of the infringing sales, then you must consider the issue of a reasonable royalty.

The amount of damages that Xactware or Verisk pay EagleView for infringing the Asserted Patents must be enough to compensate for the infringement, but may not be less than a reasonable royalty for the use of EagleView's claimed inventions.

Upon proof of infringement, you must award EagleView a reasonable royalty in the amount that EagleView has proven it could have earned on any infringing sales for which you have not already awarded lost profit damages. A royalty is a payment made to a patent owner by someone else in exchange for the right to make, use, or sell the patented invention.

The reasonable royalty award must be based on the incremental value that the patented invention adds to the end product. When the infringing products have both patented and unpatented features, measuring this value requires a determination of the value added by the patented features. The ultimate combination of royalty base and royalty rate must reflect the value attributable to the infringing features of the product, and no more.

HYPOTHETICAL NEGOTIATION

A reasonable royalty is the royalty that would have resulted from a hypothetical license negotiation between EagleView and Xactware or Verisk. Of course, we know that they did not agree to a license and royalty payment. But, in order to decide on the amount of reasonable royalty damages, you should assume that the parties did negotiate a license just before the infringement began. This is why it is called a "hypothetical" license negotiation. You should assume that both parties to the hypothetical negotiation understood that the patent was valid and infringed and both were willing to enter into a license just before the infringement began. You should also presume that the parties had full knowledge of the facts and circumstances surrounding the infringement at the time of the hypothetical negotiation.

In determining the amount of a reasonable royalty, you may consider evidence on any of the following factors, in addition to any other evidence presented by the parties on the economic value of the patent:

1. Any royalties received by the licensor for the licensing of the patent-in-suit, proving or tending to prove an established royalty.

2. The rates paid by Xactware or Verisk to license other patents comparable to the patent-in-suit.

3. The nature and scope of the license, as exclusive or nonexclusive, or as restricted or non-restricted in terms of its territory or with respect to whom the manufactured product may be sold.

4. The licensor's established policy and marketing program to maintain its right to exclude others from using the patented invention by not licensing others to use the invention, or by granting licenses under special conditions designed to preserve that exclusivity.

5. The commercial relationship between the licensor and the licensee, such as whether or not they are competitors in the same territory in the same line of business.

6. The effect of selling the patented product in promoting other sales of the licensee; the existing value of the invention to the licensor as a generator of sales of its nonpatented items; and the extent of such collateral sales.

7. The duration of the patent or patents that you are considering and the term of the license.

8. The established profitability of the product made under the patents; its commercial success; and its popularity.

9. The utility and advantages of the patented invention over the old modes or devices, if any, that had been used for achieving similar results.

10. The nature of the patented invention; the character of the commercial embodiment of it as owned and produced by or for the licensor; and the benefits to those who have used the invention.

11. The extent to which Xactware or Verisk has made use of the invention; and any evidence that shows the value of that use.

12. The portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions.

13. The portion of the profits that arises from the patented invention itself as opposed to profit arising from unpatented features, such as the manufacturing process, business risks, or significant features or improvements added by the accused infringer.

14. The opinion testimony of qualified experts.

15. The amount that a licensor (such as the patent owner) and a licensee (such as Xactware and/or Verisk would have agreed upon (at the time the infringement began) if both sides had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee—who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention—would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a patentee who was willing to grant a license.

The amount you find as damages must be based on the value attributable to the patented technology, as distinct from other, unpatented features of the accused product, or other factors such as marketing or advertising, or Xactware and/or Verisk's size or market position. In determining the appropriate royalty base and the appropriate royalty rate, the ultimate combination of both the royalty rate and the royalty base must reflect the value attributable to the patented technology. In other words, the royalty base must be closely tied to the invention. It is not sufficient to use a royalty base that is too high and then adjust the damages downward by applying a lower royalty rate. Similarly, it is not appropriate to select a royalty base that is too low and then adjust it upward by applying a higher royalty rate. Rather, you must determine an appropriate royalty rate and an appropriate royalty base that reflect the value attributable to the patented invention alone.

Entire Market Value Rule

A multi-component product may have both infringing and non-infringing components. In such products, royalties should be based not on the entire product,

but instead on the "smallest salable unit" that practices the patent and has close relation to the claimed invention. Where the smallest salable unit is, in fact, a multi-component product containing several non-infringing features with no relation to the patented feature, damages must only be based on the portion of the value of that product attributable to the patented technology. This may involve estimating the value of a feature that may not have ever been individually sold.

The entire market value rule is a narrow exception to this general rule. In order to recover damages as a percentage of revenues or profits attributable to the entire product, EagleView must establish that it is more likely than not that the patented feature drives the demand for an entire multi-component product such that it creates the basis for customer demand or 'substantially creates the value of the product.

Multiple Patents

If you find that Xactware and/or Verisk infringed multiple patents, even by a single infringing act, and if you award a reasonable royalty for the infringement, then you may award separate royalties to EagleView for each patent that was infringed. You also may consider evidence of the number of patent licenses that are needed for the allegedly infringing product and the effect on the hypothetical negotiation of having to pay a royalty for each of those licenses.

TIMING

Damages are not based on a hindsight evaluation of what happened, but on what the parties to the hypothetical license negotiations would have agreed upon. Nevertheless, evidence relevant to the negotiation is not necessarily limited to facts that occurred on or before the date of the hypothetical negotiation. You may also consider information the parties would have foreseen or estimated during the hypothetical negotiation, which may under certain circumstances include evidence of usage after infringement started, license agreements entered into by the parties shortly after the date of the hypothetical negotiation, profits earned by the infringer, and non-infringing alternatives.

NON-INFRINGING SUBSTITUTES

In determining a reasonable royalty, you may also consider evidence concerning the availability and cost of acceptable non-infringing substitutes to the patented invention. An acceptable substitute must be a product that is licensed under the patent or that does not infringe the patent.

F–34 WILLFUL INFRINGEMENT

In this case, EagleView argues that Xactware and Verisk infringed its patents and, further, that Xactware and Verisk infringed willfully. If you have decided that Xactware or Verisk has infringed, you must go on and address the additional issue of whether or not this infringement was willful. You may not determine that the infringement was willful just because Xactware and Verisk knew of the Asserted Patents and infringed them. Instead, willful infringement is reserved for only the most egregious behavior, such as where the infringement is malicious, deliberate, consciously wrongful, or done in bad faith.

To determine whether Xactware and Verisk acted willfully consider all the facts. These may include, but are not limited, to:

(1) Whether or not Xactware and/or Verisk acted consistently with the standards of behavior for its industry;

(2) Whether or not Xactware and/or Verisk intentionally copied a product of EagleView that is covered by the Asserted Patents;

(3) Whether or not Xactware and/or Verisk reasonably believed they did not infringe or that the Asserted Patents were invalid;

(4) Whether or not Xactware and/or Verisk made a good-faith effort to avoid infringing the Asserted Patents, for example, whether Xactware and/or Verisk attempted to design around the Asserted Patents; and

(5) Whether or not Xactware and/or Verisk tried to cover up its infringement.

F–35 DELIBERATIONS

When you retire to the jury room to deliberate, you may take with you these instructions, your notes, and the exhibits that the Court has admitted into evidence. I am selecting Juror Number One as your foreperson. This person will preside over the deliberations and speak for you here in open court.

You have two main duties as jurors. The first one is to decide what the facts are from the evidence that you saw and heard here in court. Deciding what the facts are is your job, not mine, and nothing that I have said or done during this trial was meant to influence your decision about the facts in any way.

Your second duty is to take the law that I give you, apply it to the facts, and decide if, under the appropriate burden of proof, the parties have established their claims. It is my job to instruct you about the law, and you are bound by the oath that you took at the beginning of the trial to follow the instructions that I give you, even if you personally disagree with them. This includes the instructions that I gave you before and during the trial, and these instructions. All the instructions are important, and you should consider them together as a whole.

Perform these duties fairly. Do not let any bias, sympathy or prejudice that you may feel toward one side or the other influence your decision in any way.

You are to resolve the factual disputes in this case based upon the exhibits which you will have in the jury room with you and your recollection of the testimony

of witnesses as bearing on those issues. You have been permitted to make notes during the course of this trial. But as I told you before we started, these notes are not evidence. You may use the notes during your deliberations to help you to recall what the testimony was. However, do not overemphasize the significance of a written note made by yourself or by a fellow juror. If a note does help to refresh your recollection, it has then been useful, but it is your recollection not the note which is important. If your memory differs, you have an absolute right to rely solely on your own recollection.

As jurors, you have a duty to consult with each other and to deliberate with the intention of reaching a verdict. Each of you must decide the case for yourself, but only after a full and impartial consideration of all of the evidence with your fellow jurors. Listen to each other carefully. In the course of your deliberations, you should feel free to re-examine your own views and to change your opinion based upon the evidence. But you should not give up your honest convictions about the evidence just because of the opinions of your fellow jurors. Nor should you change your mind just for the purpose of obtaining enough votes for a verdict.

When you start deliberating, do not talk to the jury officer, to me or to anyone but each other about the case. During your deliberations, you must not communicate with or provide any information to anyone by any means about this case. You may

not use any electronic device or media, such as a cell phone, smart phone, or computer of any kind; the internet, any internet service, or any text or instant messaging service like Twitter; or any internet chat room, blog, website, or social networking service such as Facebook, LinkedIn, or YouTube, to communicate to anyone any information about this case or to conduct any research about this case until I accept your verdict.

You may not use these electronic means to investigate or communicate about the case because it is important that you decide this case based solely on the evidence presented in this courtroom. Information on the internet or available through social media might be wrong, incomplete, or inaccurate. Information that you might see on the internet or on social media has not been admitted into evidence and the parties have not had a chance to discuss it with you. You should not seek or obtain such information and it must not influence your decision in this case.

If you have any questions or messages for me, you must write them down on a piece of paper, have the foreperson sign them, and give them to the jury officer. The officer will give them to me, and I will respond as soon as I can. I may have to talk to the lawyers about what you have asked, so it may take some time to get back to you. You should continue your deliberations if you are able to.

One more thing about messages. Never write down or tell anyone how you stand on your votes. For example, do not write down or tell anyone that a certain number is voting one way or another. Your votes should stay secret until you are finished.

Your verdict must represent the considered judgment of each juror. In order for you as a jury to return a verdict, each juror must agree to the verdict. As to each question asked, your verdict must be unanimous.

A form of verdict has been prepared for you. It has a series of questions for you to answer. You will take this form to the jury room and when you have reached unanimous agreement as to your verdict, you will fill it in, and have your foreperson date and sign the form. You will then return to the courtroom and your foreperson will give your verdict. Unless I direct you otherwise, do not reveal your answers until you are discharged. After you have reached a verdict, you are not required to talk with anyone about the case unless I order you to do so.

Once again, I want to remind you that nothing about my instructions and nothing about the form of verdict is intended to suggest or convey in any way or manner what I think your verdict should be. It is your sole and exclusive duty and responsibility to determine the verdict.

Jess M. Krannich (#14398)
Trevor J. Lee (#16703)
MANNING CURTIS BRADSHAW & BEDNAR PLLC
136 East South Temple, Suite 1300
Salt Lake City, UT 84111
Telephone: (801) 303-0034
Facsimile: (801) 364-5678
jkrannich@mc2b.com
tlee@mc2b.com

Attorneys for Plaintiffs - Additional counsel listed in signature

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF UTAH

EAGLE VIEW TECHNOLOGIES, INC., and PICTOMETRY INTERNATIONAL CORP., ***Plaintiffs*,** **v.** **NEARMAP US, INC.,** ***Defendant*.**	**PLAINTIFFS' OPPOSITION TO DEFENDANT'S MOTION TO DISMISS BASED ON UNPATENTABILITY UNDER 35 U.S.C. §101** **ORAL ARGUMENT REQUESTED** Case No.: 2:21-cv-00283-TS-DAO District Judge Ted Stewart Magistrate Judge Daphne A. Oberg

TABLE OF CONTENTS

I. INTRODUCTION 1

II. FACTUAL BACKGROUND 4

A. EagleView Revolutionized the Insurance Industry with Innovative and Accurate Roof Reports Using Non-Stereoscopic Aerial Images 4

B. EagleView's Family of Roof Report Patents Has Already Been Found Valid in View of Multiple Section 101 Challenges 6

III. LEGAL STANDARD 7

IV. ARGUMENT 8

A. The Asserted Claims of the '152 Patent Are Directed To Patentable Subject Matter 9

B. The Asserted Claims of the '737 Patent Are Directed To Patentable Subject Matter 19

C. Nearmap's Requested Ruling Is Premature At Best Because There Are Disputed Factual and Expert Issues That Must be Resolved 24

V. CONCLUSION 25

TABLE OF AUTHORITIES

Page(s)

Cases

Aatrix Software, Inc. v. Green Shades Software, Inc.,
882 F.3d 1121 (Fed. Cir. 2018).....4, 8, 24, 25

Affinity Labs of Tex., LLC v. DIRECTV, LLC,
838 F.3d 1253 (Fed. Cir. 2016).....10, 11

Alice Corp. Pty. Ltd. v. CLS Bank Int'l,
134 S.Ct. 2347 (2014)..... *passim*

Bascom Glob. Internet Servs. v. AT&T Mobility,
827 F.3d 1341 (Fed. Cir. 2016).....7, 17, 18

Berkheimer v. HP Inc.,
881 F.3d 1360 (Fed. Cir. 2018).....8, 18, 24

CardioNet, LLC v. Infobionic, Inc.,
955 F.3d 1358 (Fed. Cir. 2020).....12, 13

Core Wireless Licensing v. LG Elecs.,
880 F.3d 1356 (Fed. Cir. 2018).....11, 18

CyberSource Corp. v. Retail Decisions, Inc.,
654 F.3d 1366 (Fed. Cir. 2011).....16

Data Engine Techs. LLC v. Google LLC,
906 F.3d 999 (Fed. Cir. 2018).....21

David v. Denver,
101 F.3d 1344 (10th Cir. 1996) 7

DDR Holdings, LLC v. Hotels.com, L.P.,
773 F.3d 1245 (Fed. Cir. 2014).....21

Deere & Co. v. Bush Hog, LLC,
703 F.3d 1349 (Fed. Cir. 2012).....11

Diamond v. Diehr,
450 U.S. 175 (1981).....18

EcoServices v. Certified Aviation Servs.,
830 F. App'x 634 (Fed. Cir. 2020) 12, 13

Enfish, LLC v. Microsoft Corp.,
822 F.3d 1327 (Fed. Cir. 2016)..... *passim*

Evans v. Diamond,
957 F.3d 1098 (10th Cir. 2020) 7, 13, 14

Finjan v. Blue Coat Sys.,
879 F.3d 1299 (Fed. Cir. 2018).....11, 16, 21

Indus. Constructors Corp. v. U.S. Bureau of Reclamation,
15 F.3d 963 (10th Cir. 1994) 7

Intellectual Ventures I LLC v. Symantec Corp.,
838 F.3d 1307 (Fed. Cir. 2016).....9, 16

Koninklijke KPN N.V. v. Gemalto M2M,
942 F.3d 1143 (Fed. Cir. 2019).....8, 12, 17

McRO, Inc. v. Bandai Namco Games America Inc.,
837 F.3d 1299 (Fed. Cir. 2016)..... *passim*

OIP Techs., Inc. v. Amazon.com, Inc.,
788 F.3d 1359 (Fed. Cir. 2015).....6

Peterson v. Grisham,
594 F.3d 723 (10th Cir. 2010) 7

TecSec v. Adobe,
978 F.3d 1278 (Fed. Cir. 2020).....16, 21

Thales Visionx v. United States,
850 F.3d 1343 (Fed. Cir. 2017).....17, 19

Trading Techs. Int'l, Inc. v. CQG, Inc.,
675 F. App'x 1001 (Fed. Cir. 2017) 18

Ultramercial, Inc. v. Hulu, LLC,
722 F.3d 1335 (Fed. Cir. 2013).....8

Univ. of Fla. Rsch. Found., Inc. v. Gen. Elec. Co.,
916 F.3d 1363 (Fed. Cir. 2019).....16

Vanda Pharm. Inc. v. West-Ward Pharm. Int'l Ltd.,
887 F.3d 1117 (Fed. Cir. 2018).....9

Visual Memory LLC v. NVIDIA Corp.,
867 F.3d 1253 (Fed. Cir. 2017).....4, 24

Yu. Yu v. Apple Inc.,
1 F.4th 1040 (Fed. Cir. 2021) 16

Statutes

35 U.S.C. § 282(a) 7

Rules

Federal Rules of Civil Procedure 12(b)(6).....4, 8, 24, 25

I. INTRODUCTION

This is not a case of patents covering abstract ideas around "since the beginning of time." Mot. at 1. Since its founding in 2008, EagleView has been ***the*** pioneer in producing highly accurate roof reports, which are relied upon by hundreds of insurance companies and thousands of contractors across the United States, using all new, concrete technologies that it took substantial time and resources for EagleView to develop. EagleView's patents—including the '152 and '737 Patents challenged here—concern specific technologies that revolutionized the insurance and construction industries, allowing for the first time a fast, cost-effective, safe, and highly accurate computer-driven approach to measuring roofs so that damage can be assessed, repairs can be made, and claims can be paid in a timely and efficient manner—without the very serious safety risks and inaccuracies associated with prior art approaches—and saving insurers, contractors and homeowners countless millions of dollars each year. EagleView's inventions—which involve, *e.g.*, the use of specific types of aerial images of roofs, specific mechanisms for creating "three-dimensional models" of roofs, and specific interactive graphical user interface tools to modify the models—are the product of years of research and development and are nothing like the prior art approaches to roof measurement. This has been repeatedly confirmed: by the public (when it reacted to EagleView's patented technologies), courts (including detailed orders from two federal judges rejecting similar Section 101 arguments after a full factual record), and the Patent Office (which found every claim at issue here valid over the prior art, including in *Inter Partes* Review challenges). And while the Section 101 eligibility of the '152 and '737 Patents' claims is easily confirmed by the detailed claim language alone, this other evidence is expressly incorporated into EagleView's Complaint, confirming that Nearmap's Section 101 arguments must be denied.

Far from claiming abstract ideas, the claims of the '152 and '737 Patents instead concern critical technical improvements in user interface tools that allow a user to more accurately and reliably make iterative adjustments to a computer-generated 3D model of a roof and output a tangible, improved roof report. The claims include numerous specific requirements such as the use of specific front-end interactive tools involving "markers" and "line drawings" projected on specific types of images to assist with refining 3D models, as well as specific back-end details to make that work, such as "registering" the images to a "reference grid" corresponding to the model. All the indicia relied upon by the Federal Circuit in a Section 101 analysis to confirm non-abstractness and inventive steps are present here. It is no wonder, then, that two federal judges found that EagleView's inventions "set forth a technological solution" with a "concrete, tailored approach to measure the roof," and "were ***groundbreaking***" and merit protection.[1] Ex. 1 (Case No. 1:15-cv-7025, Dkt. 557 (cited in Dkt. 2-10) at 10); Dkt. 2-10 at 19-20, 25, (Judge Bumb) (the "Orders"). The key facts that those Orders found and relied upon are not only part of the record before the Court, but must be accepted as true for purposes of this motion to dismiss.

Nearmap's motion never addresses the key aspects of the claims or the substantial record confirming them to be patentable, and instead proposes that—contrary to the allegations in the Complaint that must be accepted as true—the Court adopt a legally and factually impermissible over-generalization of the claims by concluding that they are directed to "collecting and analyzing information using computers as tools." This straw man characterization of the inventions ignores the concrete, specific claim elements and the Complaint's allegations. The Supreme Court and Federal Circuit have consistently rejected such attempts to oversimplify the claims.

[1] All emphasis added unless otherwise noted.

Instead of addressing the indicia of patent-eligibility used by the Federal Circuit, Nearmap incorrectly treats EagleView's inventions like unpatentable business methods—claiming that they "could be" performed manually, using "pen and paper," and merely claim "results" without explaining how to achieve them. Not so—as discussed below, the claims include detailed instructions to address computer-based problems relating to computer-user interfaces that, with the benefit of the inventions, improve an aerial imagery-based technique for producing 3D models of buildings, and ultimately, roof measurement reports. As the allegations set forth in the Complaint repeatedly confirm (and which must be accepted as true for purposes of this motion), there was no "pen and paper" corollary to the claims, and there is no way to reconcile Nearmap's "mere results" argument with the claim requirements specifically delineating how the inventions are achieved. And that is just Step One of the *Alice* analysis; on Step Two, the factual allegations of the Complaint mandate a conclusion that EagleView's patents are far from "routine" or "well-known," and instead include specific and concrete improvements that have been lauded as "groundbreaking," "sophisticated," and "revolutionary" by competitors, press, and federal courts.

Lastly, while Nearmap's motion can (and should) be denied on the merits, it is also premature. While the allegations set forth in EagleView's Complaint—including documentary evidence and the lengthy history around the asserted patent family—provides more than sufficient grounds for this Court to deny Nearmap's motion outright, at a minimum it confirms that additional fact and expert evidence is necessary to evaluate Nearmap's assertions. Indeed, Nearmap's motion presents factual disputes that, according to the Federal Rules and clear Federal Circuit precedent, cannot be resolved in Nearmap's favor on a motion to dismiss and must be resolved later. Based on Nearmap's apparent view of the claims, claim construction will also be necessary to adjudicate

its arguments. Lastly, Nearmap all but ignores most of the patent claims, which will need to be addressed in any event. For these additional reasons, Nearmap's motion should be denied.

II. FACTUAL BACKGROUND[2]

A. EagleView Revolutionized the Insurance Industry with Innovative and Accurate Roof Reports Using Non-Stereoscopic Aerial Images

As set forth in the specifications of the '152 and '737 Patents, prior to EagleView's invention, roofing contractors preparing a roof repair or replacement estimate for homeowners were forced to physically visit a house and climb on the roof to take measurements; their ability to do so was affected by, among other things, staffing, travel time and expense, weather, and traffic. Dkt. 2-2 at 1:25-52; Dkt. 2-6 at 1:16-44. EagleView's invention established an entirely new alternative to manual measurements by creating accurate, 3D roof models in hours—with no ladders, tape measures, or perilous manual estimates. Aspects of that invention are delineated in the claims of the '152 and '737 Patents, which concern critical technical improvements in user-interface tools that allow a user to more accurately and reliably make iterative adjustments to a computer-generated 3D model of the roof and output a tangible roof report with real-world measurements of a physical property. Dkt. 2-2 at 3:36-41, 23:26-32; Dkt. 2-6 at 3:28-33, 23:18-24. The patents teach, among other things, iterative processes of allowing a user to interact with "markers" or "line drawings" that are overlaid on aerial images, which allow a user to make

[2] The factual allegations in the Complaint are set forth in this section, and must be accepted as true at the motion to dismiss stage. *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1125 (Fed. Cir. 2018) ("[P]atent eligibility can be determined at the Rule 12(b)(6) stage. . . ***only*** when there are no factual allegations that, taken as true, prevent resolving the eligibility question as a matter of law."); *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1261–62 (Fed. Cir. 2017) ("all factual inferences drawn from the specification [in a 12(b)(6) motion] must be weighed in favor of … the non-moving party.").

adjustments that are then translated into a computerized three-dimensional model of the building's structure. Dkt. 2-2 at 3:16-25; Dkt. 2-6 at 3:8-17. This computerized 3D model is subsequently updated across all aerial images being shown to the user. *Id*. Thus, "[b]y concurrently displaying operator identified features in multiple views of building roof 407, 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." Dkt. 2-2 at 14:41-46; Dkt. 2-6 at 14:29-35. As a result, the projection of the feature onto the two images "provide[s] a fluid, interactive model generation experience for the operator enabling the operator to drag, draw, or otherwise indicate/manipulate features in a first image and view the results of their work concurrently projected into a second image." Dkt. 2-2 at 23:28-32; Dkt. 2-6 at 23:20-24.

Praise for EagleView's innovations, including those in the '152 and '737 Patents, has been immense. As alleged in the Complaint, news outlets have noted that "EagleView founder Chris Pershing changed how the roofing industry operates with a ***software breakthrough***" (Dkt. 2-11; Dkt. 2 ¶ 31), and "EagleView made one of 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." Dkt. 2-12 at 2; Dkt. 2 ¶ 32. "Industry experts . . . consider EagleView's invention the 'greatest ***technological breakthrough***' in the industry because it not only saves contractors hundreds of dollars, it also saves an enormous amount of time and expense in several areas (like insurance) while eliminating the risk of injury." Dkt. 2-12 at 2. Even EagleView's then-largest competitor admitted that EagleView's technology was "cutting-edge," "very accurate," "innovative," offered a "breakthrough," and was unlike "anything that [previously] emerged as possible." *Id.* at 7-8.

B. EagleView's Family of Roof Report Patents Has Already Been Found Valid in View of Multiple Section 101 Challenges

In 2019, after a multi-week trial, a jury ultimately found five of EagleView's patents valid and infringed by EagleView's competitors Xactware and Verisk, awarding EagleView $125 million in damages (later trebled to $375 million by the Court for willfulness). In confirming the ruling and denying those defendants' post-trial motions, Judge Bumb in the District of New Jersey denied "all of Defendants' challenges to EagleView's resounding trial victory—from Defendants' section 101 challenge all the way through damages." Dkt. 2-10 at 78. The five patents found valid under Section 101 in that proceeding[3] are all related to the '152 and '737 Patents that Nearmap now says are invalid for similar reasons that were found to be insufficient in that proceeding.[4] With respect to *Alice* Step 1, Judge Bumb held that "it is clear that EagleView's invention solved the problem of generating a roof repair estimate without direct 'human measurement of a roof.'" Dkt. 2-10 at 18 (order denying a new trial). That court concluded that EagleView's patents "solve the specific problem of generating a roof repair estimate without direct human measurement of a roof" including by allowing a user to "change locations of the specified points on the two aerial views." Dkt. 2-10 at 10-11, 22. Accordingly, the claims "recite specific implementations that improve the functioning of the technological process." *Id.* at 11.[5]

---

[3] U.S. Pat. No. 8,078,436 ("the '436 Patent"), Claim 10 of U.S. Pat. No. 8,170,840 ("the '840 Patent"), Claim 20 of U.S. Pat. No. 9,129,376 ("the '376 Patent"), Claim 26 of U.S. Pat. No. 8,825,454 ("the '454 Patent"), and Claim 12 of U.S. Pat. No. 8,818,770 ("the '770 Patent").

[4] The '152 and '737 Patents were both invented by Chris Pershing, assigned to EagleView, and claim priority to Provisional Application No. 61/197,904, filed on Oct. 31, 2008 ("'904 Application"). Similarly, all five patents previously found valid under Section 101 were invented by Chris Pershing and assigned to EagleView, and the '840, '376, '454, and '770 Patents also claim priority to the '904 Application. All seven of these patents claim innovative methods for generating accurate roof reports.

[5] Because the '152 and '737 Patents share the same inventor, are part of the same family of all

EX2018 / IPR2022-00734 / Page 558 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

Judge Bumb rejected the argument that EagleView's patents "are just computerized routines of what a human could do without the software," finding that they claim "a technological solution to the well-known problem of generating a roof report without a human's manual, direct measurement of a roof." Dkt. 2-10 at 19. Judge Bumb explained that the claims "require[] modifying a model of the roof based on ***specific adjustments to claimed markers*** on the 2D roof images," just like the claims of the '152 and '737 Patents. Dkt. 2-10 at 20; Dkt. 2-2, claim 10; Dkt. 2-6, claim 1. Judge Bumb found it unnecessary to even proceed to Step 2 of the *Alice* test, but noted that she would have found that the claims "recite an inventive concept" under Step 2 because "EagleView's inventions were nowhere close to resembling the practice of climbing on rooftops with tape measures in hand" and instead were "groundbreaking." Dkt. 2-10 at 25.

III. LEGAL STANDARD

On a motion to dismiss, the Court must "accept all well-pled factual allegations as true and view these allegations in the light most favorable to the nonmoving party." *Evans v. Diamond*, 957 F.3d 1098, 1100 (10th Cir. 2020) (quoting *Peterson v. Grisham*, 594 F.3d 723, 727 (10th Cir. 2010)). The Court must consider all factual allegations in the complaint, including any exhibits or documents incorporated by reference. *Indus. Constructors Corp. v. U.S. Bureau of Reclamation*, 15 F.3d 963, 964-65 (10th Cir. 1994). Extrinsic evidence outside of the complaint may not be introduced to create factual disputes. *David v. Denver*, 101 F.3d 1344, 1352 (10th Cir. 1996).

"A patent shall be presumed valid," and on a motion to dismiss under Section 101, "[t]he

---

but one of the previous patents, and claim similar subject matter, the facts laid out in Judge Bumb's order denying a new trial, as described in EagleView's Complaint and attached as Exhibit 9 thereto, apply equally here. *See, e.g.*, *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362 (Fed. Cir. 2015) (on a motion to dismiss, a court may consider "materials incorporated into the complaint by reference").

burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity." *See* 35 U.S.C. § 282(a). The question of patent eligibility involves "a two-step analytical framework to identify patents that, in essence, claim nothing more than abstract ideas." *Bascom Glob. Internet Servs. v. AT&T Mobility*, 827 F.3d 1341, 1347 (Fed. Cir. 2016). The Court must first determine whether claims are directed to an abstract idea and then whether the claims include an inventive concept that transforms the abstract idea into a "patent-eligible application." *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S.Ct. 2347, 2355 (2014). Patent claims directed to "non-abstract improvements to existing technological processes and computer technology," *Koninklijke KPN N.V. v. Gemalto M2M*, 942 F.3d 1143, 1149 (Fed. Cir. 2019), and "distinct process[es] to automate a task previously performed by humans" are patent eligible. *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016). "[W]hether a claim recites patent eligible subject matter is a question of law which may contain underlying facts." *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018). A patent may be determined ineligible at the Rule 12(b)(6) stage only "when there are no factual allegations that, taken as true, prevent resolving the eligibility question as a matter of law." *Aatrix*, 882 F.3d at 1125. At a minimum, the clear and convincing standard applies to any underlying fact issues relevant to Section 101. *See, e.g.*, *Ultramercial, Inc. v. Hulu, LLC*, 722 F.3d 1335, 1338 (Fed. Cir. 2013).

IV. ARGUMENT

Nearmap requests that the Court accept its highly disputed factual contention that the claims of two of the Asserted Patents are both abstract and non-inventive. This is incorrect based purely on the claims and patent specifications, and is contradicted by the factual allegations of EagleView's Complaint, which must be taken as true at this stage: the inventions claimed in the

'152 and '737 Patents revolutionized the industry and recite concrete improvements in roof-estimation technology that use specific types of aerial images to generate accurate 3D roof models.

A. The Asserted Claims of the '152 Patent Are Directed To Patentable Subject Matter

1. The "Directed To" Inquiry

The first part of the Step 1 analysis is to determine what the claims are "directed to," being "careful to avoid oversimplifying the claims" and not to "merely identify a patent-ineligible concept underlying the claim." *McRO*, 837 F.3d at 1313; *Vanda Pharm. Inc. v. West-Ward Pharm. Int'l Ltd.*, 887 F.3d 1117, 1134 (Fed. Cir. 2018). This requires reading the claims "in light of the specification," not in isolation. *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1337 (Fed. Cir. 2016); *Intellectual Ventures I LLC v. Symantec Corp.,* 838 F.3d 1307, 1317 (Fed. Cir. 2016) ("The written description is particularly useful in determining what is well-known or conventional.").

Here, the asserted claims of the '152 Patent are directed to an improved computer system for generating **accurate roof measurement information** using an **interactive graphical interface tool** to **register aerial images to a reference grid that corresponds to a computer-generated 3D model of a roof** for making **iterative adjustments to the 3D model**. Claim 10 specifically delineates a method for "generating a roof estimate report" that requires the use of two specific "aerial images," each providing a "different view of the roof of the building," user interfaces tools that allow for "receiving an indication of a feature," of a building, "modifying a three-dimensional model" based on that user indication, "displaying a projection of the feature" onto those aerial images, and then "displaying a marker" that a user can manipulate such that the computer system receives "an indication of a point" that it will subsequently use to "register... the aerial image to a reference grid corresponding to the three-dimensional model." Dkt. 2-2, claims

1, 10. The specification describes the benefits of implementing these claimed features, because the "operator is provided with useful visual cues as to the correctness of the 3D model and/or the correspondence between the aerial images." Dkt. 2-2 at 5:62-6:4; *id.* at 3:21-25.

Defendant overlooks the plain language of the claims, specification, and the Complaint's factual allegations to argue that EagleView's patents are generically directed to, alternately, "collecting and analyzing information using computers as tools" (Mot. at 8), or "overlaying a roof outline onto aerial images" (Mot. at 9). But Nearmap's formulations vastly "oversimplify[]" the claims and ignore their specific requirements, *McRO*, 837 F.3d at 1313, making no mention of any of the specific and concrete claimed requirements described above. Defendant's approach—to generalize and describe the invention at a high level of abstraction—has been repeatedly rejected by the Federal Circuit, and yet underlies (and is fatal to) its entire analysis under Step 1.

2. Alice Step 1: The '152 Patent Claims Are Not Directed To An Abstract Idea

Under any formulation of the "directed to" inquiry, the '152 Patent's claims are not directed to an abstract idea. Each of the Federal Circuit's indicia satisfying Step 1 is present here. *First*, the Federal Circuit looks to whether the claims are "specific," "concrete," or have a "tangible" form. *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1258 (Fed. Cir. 2016). That is precisely what is claimed by the '152 Patent. To begin, the claims require ***specific*** "aerial image[s] of a building having a roof" that each "provid[e] a different view of the roof of the building." Dkt. 2-2, claim 10. A method using those particular images—instead of countless other ways to generate roof-measurement reports—is neither abstract nor preemptive.[6] The claimed

[6] Indeed, the Patent Office has already found, in an IPR proceeding, that claim 10 is patentable over the prior art, confirming its inventiveness. Dkt. 2, ¶ 8 (citing IPR2016-00591).

method then provides a specific graphical user interface tool to interactively and iteratively "modify a three-dimensional model of the roof" across the different images. Dkt. 2-2, claim 1. As set forth in the asserted claims, this tool has specific requirements, beginning by allowing the system to "receive an indication of a feature of the building" in the images, and then "display[ing] a projection of the feature from the modified three-dimensional model" onto the multiple images "as a line drawing of the feature." *Id.* at 22:50-23:21. The claimed method then further specifies the interactive tool by requiring the display of a "marker" with which a user assists the system in registering "the aerial image to a reference grid corresponding to the three-dimensional model," which the system does specifically in response to the "indication of a point on the first aerial image that is provided "via the marker." *Id.*, claim 10. The claims use this information to produce a specific roof estimate report that includes real-world measurements.[7] These specific requirements regard "particular techniques" for roof-modeling, *i.e.*, the use of a specific technique for creating the 3D model using different aerial images, and a specific tool for modifying it. *McRO*, 837 F.3d at 1316 ("By ***incorporating the specific features of the rules as claim limitations***, claim 1 is limited to a specific process for automatically animating characters using ***particular information and techniques*** and ***does not preempt approaches that use … different techniques***."). The claim lays out "specific steps … that accomplish the desired result" in a "concrete" way. *Finjan v. Blue Coat Sys.*, 879 F.3d 1299, 1303-05 (Fed. Cir. 2018).

Second, specific technical improvements directed to solving technical problems in the prior

[7] The term "roof estimate report" appears in the preamble of claim 1, which EagleView contends is limiting. *Deere & Co. v. Bush Hog, LLC*, 703 F.3d 1349, 1357 (Fed. Cir. 2012) ("a preamble is limiting if it is 'necessary to give life, meaning, and vitality' to the claim."). Thus, for purposes of this motion, the term "roof estimate report" is treated as a claim requirement. *Id.*

art are not abstract. *Core Wireless Licensing v. LG Elecs.*, 880 F.3d 1356, 1363 (Fed. Cir. 2018); *Enfish*, 822 F.3d at 1337. Here, the claims describe a specific implementation for solving the technical challenges of generating accurate roof reports, enabling meaningful benefits, including allowing the operator to "obtain[] 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." Dkt. 2-2 at 14:41-46; *id.* at 23:26-32 (describing the "fluid, interactive" model experience for the operator enabled by claims). These are non-abstract, specific improvements solving distinct problems of existing computer systems. *Koninklijke*, 942 F.3d at 1150.

Third, the claims are "employed to perform a ***distinct*** process to automate a task" from what was previously performed by humans. *McRO*, 837 F.3d at 1299. In *McRO*, the asserted patents "aim[ed] to automate a 3-D animator's tasks" using "rules" to calculate parameters required for animation that was previously performed by hand, and was patent eligible because it was "distinct" from a task previously performed by humans. *Id.* at 1314-15. So too here. Contractors previously measured roofs using tape measures, Dkt. 2-2 at 1:25-30, whereas EagleView invented an entirely ***different, better*** approach using aerial images and specific interactive tools to improve accuracy. *See also CardioNet, LLC v. Infobionic, Inc.*, 955 F.3d 1358, 1370-71 (Fed. Cir. 2020) (criticizing court's "incorrect assumption that the claims are directed to automating known techniques."); *EcoServices v. Certified Aviation Servs.*, 830 F. App'x 634, 642-43 (Fed. Cir. 2020) ("specific solution" for improving "human-operated washing systems").

Finally, the Supreme Court repeatedly "ha[s] described ***the concern that drives*** this [abstract idea] exclusionary principle is one of ***pre-emption***." *Alice*, 134 S. Ct. at 2354. There is no preemption here: the '152 Patent claims a specific implementation of a user interface tool that

does not preempt the ability to use a computer to measure roofs. Indeed, as EagleView pled (and will prove through fact and expert testimony), "[t]here are countless other ways one could try to develop a roof measuring system other than using EagleView's patented selection of images." Dkt. 2, ¶ 24. At this stage, this factual assertion must be taken as true. *Evans*, 957 F.3d at 1100.

These points are consistent with two federal court rulings that patents related to those-in-suit and with overlapping claim language were not abstract. Judge Kugler of the District of New Jersey concluded that the "asserted claims are directed to an improvement in the functioning of a computer," which "solve the specific problem of generating a roof repair estimate without direct human measurement of the roof." Ex. 1 (Dkt. 557) at 10. Judge Bumb in the same district confirmed that ruling with specific citations to fact and expert evidence, explaining that after observing the 12-day trial, "it is clear that EagleView's invention solved the problem of generating a roof repair estimate without direct 'human measurement of a roof'," and that the patents related to the '152 Patent, like the '152 Patent itself, "require[] specific, tangible images as inputs and generates tangible roof-estimate repots as outputs," and "[e]ach also requires modifying a model of the roof based on specific adjustments to claimed markers on the 2D roof images." Dkt. 2-10 at 18, 20. These findings apply equally here, as the '152 Patent requires collecting images with specific characteristics, modifying a model of the roof based on adjustments to claimed markers, and outputting a tangible roof estimate report—among other requirements on top of those.

Nearmap's counterarguments are unpersuasive, contradict two prior court orders, and at best raise factual issues that cannot be resolved at this stage. As discussed above, Nearmap's contention that the claims are directed to "processes of collecting and analyzing information using computers as tools" (Mot. at 8) is incorrect. *CardioNet*, 955 F.3d at 1370-71; *EcoServices*, 830 F.

App'x at 642-43. Nearmap's contention that the claims are merely "collecting and analyzing information" in a way that could be performed "using pen and paper" (Mot. at 3, 8, 11) fails too. *First,* there is no cognizable evidence that prior art users implemented the claimed approach manually using a pen and paper, and such a conclusion would contradict the Complaint's allegations that the claims reflect a completely ***new approach*** that bears no resemblance to the prior art "climb the roof" techniques—facts that have been repeatedly confirmed in the patents, court orders and PTAB rulings. Dkt. 2-10 at 25, n.9 ("EagleView's inventions were nowhere close to resembling the practice of climbing on rooftops with tape measures in hand."); *see also* Dkt. 2-2 at 1:27-30; Ex. 1 (Dkt. 557) at 7, 10; Dkt. 2-10 at 7. The Court must accept these allegations for purposes of this motion to dismiss, *Evans*, 957 F.3d at 1100, which dooms Nearmap's argument at this stage, and confirms the ***validity*** of the claims—as discussed above, replacing human activity with a distinct, computerized approach confirms Section 101 is satisfied. *McRO*, 837 F.3d at 1314.

Second, Nearmap's assertion that the claim requirements "could" be implemented manually with a pen and paper is also incorrect and at odds with the Complaint's allegations. As discussed above, the claims never have been implemented that way. Nor could they: the claim language uses concepts not reducible to "pen and paper," including "projecting features" on a computer display, "modifying a three-dimensional model" of a roof, and "registering" an aerial image "to a reference grid" that "corresponds to the three-dimensional model." Dkt. 2-2, claims 1, 10.[8] As repeatedly confirmed by the Complaint's allegations, these are not human behaviors

[8] Nearmap attempts to reduce the claim language to what can be accomplished by "a human who outlines an image on a sheet of paper." Mot. at 11. But no human ever did so in connection with roof measurements, nor could a human "display[] a projection of [] feature[s]" onto the second image, let alone iteratively in real-time as claimed. Dkt. 2-2, claims 4, 5, 10.

that can or ever were replicated with a pen and paper. Dkt. 2-10 at 22-23; Ex. 1 (Dkt. 557) at 18.

Nearmap's second argument—that the claims present "results" without explaining "how" those results are attained (Mot. at 8)—also fails. The claims lay out a series of steps performed on a computer, and describe exactly how those steps are accomplished. Nearmap's allegation to the contrary is incorrect, and cannot be accepted, as each of the four elements it identifies are plainly described in specific claim language and supported by the patent's specification. Mot. at 8-9.

Nearmap's remaining arguments fare no better. *First,* Nearmap incorrectly contends the claims do not describe "how the claimed image views are displayed or even generated," ignoring the claimed requirement that two different aerial images be obtained and displayed, which the specification explains can be done in a variety of ways, including, in one embodiment, through a "repository of aerial images" which are "obtain[ed]... by, for example, providing an indicator of the location of the specified building." Dkt. 2-2 at 3:65-4:1, 4:1-15. The image data is then stored in memory for "further processing," including by displaying those images on a computer screen, and then utilized for subsequent claim steps. *Id.* at 4:19, 4:43-46.

Second, Nearmap contends the claims do not "say" how "the roof feature is received or indicated," ignoring that claim 10 requires "a marker operable to specify a point on an image," which provides an indication to allow for "operator inputs specifying various features... of the roof," and used to "generate" or "modify" the claimed 3D model. *Id.* at 3:6-31.

Third, contrary to Nearmap's assertions, the claims expressly describe "how the three-dimensional model is modified" and "generated," by requiring that the system receive indications of roof features, which are used to project line drawings onto the aerial images, updating the 3D model iteratively based on every indication from the user. Dkt. 2-2, claims 1, 10; *see also id.* at

EX2018 / IPR2022-00734 / Page 567 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

12:17-29 (confirming how claimed features can modify the 3D model); *see also* FIGS. 4A-4F.

Finally, the claims describe "how a projection of the roof feature is overlaid on the images" and "how it is determined where to project those overlays on the image" by requiring that the images are overlaid on "corresponding locations" of the two images relative to the "feature" that had been indicated. *Id.* at claim 1. The patent's specification "bolster[s]" the "conclusion that the claims are directed to an improvement of an existing technology," *Enfish*, 822 F.3d at 1337, explaining exactly how to concurrently display projections on both images. *Id.* at 23:1-11; 23:15-21. Thus, the claims recite "specific steps … that accomplish the desired result" in a "concrete" way. *Finjan*, 879 F.3d at 1303-05; *TecSec v. Adobe*, 978 F.3d 1278, 1293-96 (Fed. Cir. 2020).

As such, EagleView's claims differ starkly from the claims in *Univ. of Fla. Rsch. Found., Inc. v. Gen. Elec. Co.*, which failed to explain "*how* the drivers do the conversion that [patentee] points to." 916 F.3d 1363, 1368 (Fed. Cir. 2019) (emphasis original). There, the Federal Circuit distinguished those claims from eligible claims in which "[t]he patent did not merely claim this enhancement to the computer memory system; *it explained how it worked*…." *Id.* Indeed, the '152 Patent specifically describes ***how*** its novel correspondence is performed (through specific markers and steps based on displayed aerial images providing different views) and ***what*** the enhancement is (increased accuracy and user feedback), in stark contrast to broadly claiming an "enhance[ment] … in some way," as the claims did in *Yu*. *Yu v. Apple Inc.*, 1 F.4th 1040, 1043 (Fed. Cir. 2021); Mot. at 15. This is also in contrast to the claims found invalid in *Symantec*, which involved "a conventional business practice—the screening of messages by corporate organizations—in the context of electronic communications," and the claim in *CyberSource*, which "extend[ed] to essentially *any method of detecting credit card fraud* based on information

relating past transactions to a particular 'Internet address,' even methods that can be performed in the human mind." *See Intell. Ventures I LLC.*, 838 F.3d at 1318; *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372 (Fed. Cir. 2011).

Lastly, whether the claims may be performed on "generic computer components" (Mot. at 4) makes no difference. The Section 101 inquiry asks whether claims improve a technological process, not whether they require specialized hardware. *Koninklijke*, 942 F.3d at 1150; *Enfish*, 822 F.3d at 1335 ("Software can make non-abstract improvements to computer technology just as hardware improvements can…."). Just as "claims directed to a new and useful technique for defining a database that runs on general-purpose computer equipment are patent eligible," so too are EagleView's claims for transforming images into accurate roof-measurement reports. *Thales Visionx v. United States*, 850 F.3d 1343, 1349 (Fed. Cir. 2017).

3. Alice Step 2: The '152 Patent Recites Inventive Concepts

The '152 Patent claims also satisfy Step 2, as they recite "inventive concept[s] that [are] significantly more than the abstract idea itself." *Bascom*, 827 F.3d at 1349. As explained above, the '152 Patent discloses a new system that uses specific techniques for creating a 3D model of a building using aerial images having different views, and a specific tool for modifying that model. Based on the patent's extensive criticisms of prior systems (*see* Section IV.A.2, *supra*)—which at this stage the Court accepts as true—it is clear that there was nothing "well-understood, routine, [and] conventional" about that technology. *Alice*, 134 S. Ct. at 2359. As set forth in the patent, the court orders and the Complaint, the specific innovations set forth in the asserted claims have a very significant real-world impact on the functioning of computer systems, permitting for the first time users to obtain immediate "feedback regarding the accuracy of the roof model" being

EX2018 / IPR2022-00734 / Page 569 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

generated by the operator's use of the claimed computer system (Dkt. 2-2 at 3:36-41), which prior art systems lacked. Section II.A. Indeed, with the benefit of a fulsome record, Judge Bumb disagreed that EagleView's patents "are just computerized routines of what a human could do without the software," finding that the claims "set forth a technological solution to the well-known problem of generating a roof report without a human's manual, direct measurement of a roof." Dkt. 2-10 at 19; *id*. at 25 ("crystal clear that EagleView's inventions were . . . groundbreaking"). This type of real-world, measurable improvement to efficiency and accuracy is precisely the type that the Federal Circuit has repeatedly held satisfies Section 101. *Bascom*, 827 F.3d at 1351 (claim held inventive that made a prior art system "***dynamic and efficient***."); *Core Wireless*, 880 F.3d at 1363 (claim held inventive because it improved the "efficiency" and "speed" of prior art technique). And that they are set forth in the intrinsic evidence presents particularly persuasive evidence of an inventive step. *Berkheimer*, 881 F.3d at 1369; *Bascom*, 827 F.3d at 1350-51.

Defendant's arguments on Step 2 are easily rejected. Defendant argues that claim 10 of the '152 Patent recites "nothing but generic functions," (Mot. at 14), but that again fails to acknowledge the numerous specific requirements of claim 10. Section IV.A.2. That the claims do not recite "any allegedly 'inventive programming'" (Mot. at 15) is irrelevant to a Section 101 analysis, which does not require a specific way of programming the claimed tools. *Core Wireless*, 880 F.3d at 1363; *Trading Techs. Int'l, Inc. v. CQG, Inc.*, 675 F. App'x 1001, 1004 (Fed. Cir. 2017). It is also immaterial that the claims partly rely on "known 'textbook' photogrammetric algorithms." Mot. at 14. EagleView did "not seek to patent a mathematical formula" or "pre-empt the use of [an] equation" within a particular field—but instead "only to foreclose" using photogrammetric correlations "in conjunction with all of the other steps in the[] claimed" novel

EX2018 / IPR2022-00734 / Page 570 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

invention. *Diamond v. Diehr*, 450 U.S. 175 at 187 (1981); *Thales*, 850 F.3d at 1349 ("mathematical equation[s] do[] not doom [] claims to abstraction").

Finally, claims 2, 4, 5, 7, 8, 11, 15, 17, 18, 20, 21, 24, and 25 are likewise inventive. Contrary to Nearmap's cursory dismissal of them as ineligible "for the same reasons discussed above," these claims describe, for example, ***how*** a 3D roof model is modified based on a line drawing (claims 2, 17, 25), when projections of features in aerial images are displayed ***in order to provide the increased accuracy described in the specification*** (claims 4, 5, 20, 21), additional requirements for the concrete aerial images (claims 7, 8, 24), how a specific type of marker is used and manipulated (claim 11), how the roof estimation module fits within a larger computing system (claim 15), and how position information is received and translated (claim 18). These claims increase the accuracy of the resulting roof measurement information in an inventive way.

B. The Asserted Claims of the '737 Patent Are Directed To Patentable Subject Matter

1. The "Directed To" Inquiry

Like the '152 Patent, the '737 Patent is directed to an improved computer system that **generates a roof estimate report** with **specific content** through **enhanced user feedback** while the user **manipulates an interactive graphical user interface tool** with respect to **different aerial images** to generate **more accurate roof measurements**. These concepts are specifically delineated in the asserted claims, which require "displaying... a plurality of aerial images of a roof at the same time," where those aerial images have the specific requirements of being from a "different view" and "taken from a different angle." Dkt. 2-6, claim 1. The claims also require "respective line drawings representing features of the roof" overlaid on each of the images, where the line drawings "hav[e] features in common" with the drawings. Using those specific aerial

images and line drawings, a user can "chang[e]" the line drawings "representing a feature of the roof" on a "first aerial image," and then make "corresponding changes... to the line drawing overlying the second aerial image." The system then "generat[es] and output[s] a roof estimate report," which includes specific requirements including "numerical values for corresponding slope, area, or lengths of edges of at least some of the plurality of planar roof sections of the roof."

The '737 Patent's specification confirms the specific and concrete nature of these requirements, explaining that multiple aerial images may be "simultaneously presented to the operator, such that when the operator indicates a feature in the first image view, a projection of that feature is automatically presented in the second image view," as claimed in claim 1 ("displaying... the respective line drawings representing features of the roof."). *Id.* at 5:54-59, claim 1. The specification explains that by implementing the technological solution for roof measurement in this way, the "operator is provided with useful visual cues as to the correctness of the 3D model and/or the correspondence between the aerial images." *Id.* at 5:59-63. Once again, contrary to the law, Defendant vastly "oversimplif[ies]" the claims and ignores their specific requirements, *McRO*, 837 F.3d at 1313, claiming that the patent is directed to "the abstract idea of overlaying a roof outline onto aerial images and determining roof measurement information to generate a roof report." Mot. at 17. Nearmap's omission of key claimed requirements causes Nearmap's analysis to fail out of the gate.

2. Alice Step 1: The '737 Patent Claims Specific, Concrete Steps For Generating An Accurate Roof-Measurement Report

Like the '152 Patent, the '737 Patent is not directed to an abstract idea. *First,* Claim 1 requires displaying ***specific*** "aerial images of a roof at the same time," with specific requirements, including that the images "provid[e] a different view, taken from a different angle of the same

roof." Dkt. 2-6, claim 1. The claimed method then "display[s] … line drawings representing features of the roof" and "chang[es]" the line drawing overlying one aerial image "in response to" changes in the line drawing overlying another aerial image. *Id.* The claims recite changing corresponding features in two different aerial images ***specifically***—not abstractly—by requiring "particular information" for roof-modeling. *McRO*, 837 F.3d at 1316. The remaining elements specify implementation details, including that line drawings "overl[ay]" the aerial images and must have "features in common." Dkt. 2-6, claim 1. After making corresponding changes in the aerial images, the claims require "generating and outputting a roof estimate report" having particular specific features. *Id.* at 1:55-58, 2:55-58. These claims "recite more than a mere result" or abstract collection and presentation of information, but "[i]nstead … specific steps … that accomplish the desired result" in a "concrete" way. *Finjan*, 879 F.3d at 1303-05; *TecSec*, 978 F.3d at 1293-96.

Second, the '737 Patent's claims also recite specific interactive tools and technical improvements—not abstract applications of mathematical formulas—through the use of corresponding line drawings to identify roof structure elements in multiple aerial images. The purpose of this invention is that "the operator obtains feedback regarding the correctness and/or accuracy" of steps taken toward generation of the roof estimate report, *see id.* at 13:30-34, and is not hampered by obstructions that appear in only a subset of available roof images, *id.* at 15:51-56. Indeed, that "feedback" process "may be performed at near real-time speeds, so as to provide a fluid, interactive model generation experience" for the user, allowing the user to "view the results of their work concurrently projected into a second image." *Id.* at 23:19-26. These additional elements provide specific requirements that confirm the claims address a problem specific to the aerial rooftop measurement technology pioneered by EagleView. *See DDR Holdings, LLC v.*

Hotels.com, L.P., 773 F.3d 1245, 1257 (Fed. Cir. 2014); *Data Engine Techs. LLC v. Google LLC*, 906 F.3d 999, 1011 (Fed. Cir. 2018); *Enfish*, 822 F.3d at 1337.

Third, the '737 Patent performs "a ***distinct process*** to automate a task," *McRO*, 837 F.3d at 1313, using aerial images rather than measuring tape to determine physical roof measurements. Section IV.A.2. Indeed, Judge Kugler explicitly considered the '737 Patent's patentability, before it was streamlined from that case, denying summary judgment on unpatentability and finding that "[t]he relevant claims are not directed merely to correlating by the human mind two different aerial views," "[n]or do the claims merely replace a human's sketch of a roof section from different aerial views," but rather "[t]his creation of a roof model … is a technological solution to the previous method of climbing up on the roof to physically measure elevations at different locations on the roof and then calculating desired roof geometry." Ex. 1 (Dkt. 557) at 8-10.

Defendant largely recycles its previous arguments, which are incorrect for the reasons above. *See* Section IV.A.2. Defendant's other arguments on the '737 Patent likewise fail. *First,* the claims are not "part of the same method" used for decades (Mot. at 20); until EagleView's invention, contractors ***never*** used different views of aerial images in an iterative process that provides feedback on the accuracy of the measurements and resulting model, and Nearmap does not contend otherwise. *See* Dkt. 2 at ¶¶ 23, 28-29; Dkt. 2-10 at 7, 18-19. *Second*, Defendant's argument that the "roof estimate report" is abstract because it can be "satisfied by the display . . . on a website" is non-sensical: the "roof estimate report" represents a specific requirement for an output that describes real-world measurements of a physical structure; that it can be displayed on a computer screen in addition to printed form has no bearing on its abstractness. *Third*, Defendant incorrectly characterizes the claimed invention as a "business benefit, not a technological benefit,"

but, as described above, the '737 Patent teaches specific improvements to computer technology, not a mere "business benefit." Section IV.A.2.[9] The public, the PTAB, and District of New Jersey judges have confirmed this, in reacting to EagleView's embodiments.

3. Alice Step 2: The '737 Patent Recites Inventive Concepts

The '737 Patent recites inventive concepts that have been hailed by the industry and by other federal judges as nothing short of "groundbreaking." Dkt. 2-10 at 25; *see* Section IV.A.3. The claims improve accuracy and user feedback during model creation based partly on the reflection of corresponding changes to line drawings overlaid on images presenting different views of the building. *Id.*; Dkt. 2-6, claim 1; *see also id.* at 23:20-21 (describing accuracy benefits and "fluid interactive model generation experience" of claims).[10] Once again, Defendant repeats arguments it previously made for the '152 Patent, which are equally incorrect here: the '737 Patent does not rely on "generic computer components" or "standard programming techniques" to confer inventiveness, but rather on an inventive user-interface tool that enables transforming images into

---

[9] The dependent claims are also not abstract, including for the reasons explained with respect to the '152 Patent. Additionally, by way of example only, claims 2, 14, and 17 of the '737 Patent describe ***how*** the 3D model is modified, claims 3 and 27 describe what the "indicated roof feature" is, claims 4, 5, 19-21, 23, and 28-31 describe specific temporal requirements on display of the model in order to achieve increased accuracy, claims 6, 13, 22, 25, 34, 35, and 36 describe additional implementation details regarding displaying the line drawings and user interface interaction, claims 7, 8, 24, 32, and 33 add additional specific requirements for the aerial images, claim 9 details the connection between the feature correspondence among aerial images and roof report generation, and claims 10 and 11 add requirements for display and manipulation of a marker; these claims are all inventive because they further define how the claimed method "improve[s] an existing technological process." *Alice*, 134 S. Ct. at 2358.

[10] The Patent Office has twice confirmed the inventiveness of the '737 Patent's claim elements. During prosecution of patents related to the '737 Patent and sharing common claim elements, the Patent Office agreed that the prior art lacked the claimed "line drawings" and corresponding reflection of changes across two images. Years later, the PTAB, considering a subsequently filed *inter partes* examination request, also confirmed that the '737 Patent's claims were valid and inventive. Mot. at 18, n.8.

EX2018 / IPR2022-00734 / Page 575 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

highly-accurate roof measurements through automated feedback. *See* Section IV.A.3.

C. Nearmap's Requested Ruling Is Premature At Best Because There Are Disputed Factual and Expert Issues That Must be Resolved

The Court can also reject Nearmap's challenge without reaching the merits. First, the Court should deny Nearmap's motion because the factual record is not yet sufficiently developed, and the factual predicates of Nearmap's arguments impermissibly contradict the factual allegations of the Complaint, as described above. "[W]hether a claim recites patent eligible subject matter is a question of law which may contain underlying facts." *Berkheimer*, 881 F.3d at 1368. Here, there are many key facts alleged in EagleView's Complaint that are not only disputed by Nearmap, but fatal to Nearmap's arguments here. That alone requires denial of Nearmap's motion, and at a minimum requires further factual development, including both fact and expert testimony. On *Alice*'s Step 1 analysis, this includes testimony on whether the claim elements are "specific" and "concrete"; whether they solved a "technological problem"; why the claims enable a POSITA to implement that solution rather than merely delineating a "result"; evidence regarding the prior art methodology used by humans to measure roofs, and how the claims recite a "distinct process to automate a task previously performed by humans"; and evidence describing other ways to perform computer-generated roof measurements without using the claimed approach, confirming that the claims do not preempt the field. Likewise, on *Alice* Step 2, testimony regarding the inventiveness of the user-interface steps claimed in the '152 and '737 Patents will aid the Court in understanding why the specifically claimed user interface and feedback process were revolutionary and "groundbreaking," as Judge Bumb concluded after a 12-day trial. When resolved in EagleView's favor, as they must be on a motion to dismiss, these facts establish that EagleView's patents are patent eligible. *Aatrix*, 882 F.3d at 1125 ("[P]atent eligibility can be determined at the Rule

EX2018 / IPR2022-00734 / Page 576 of 723
NEARMAP US, INC. v. EAGLE VIEW TECHNOLOGIES, INC.

12(b)(6) stage. . . ***only*** when there are no factual allegations that, taken as true, prevent resolving the eligibility question as a matter of law."); *Visual Memory*, 867 F.3d at 1261-62.

Additionally, Nearmap's brief raises questions of claim construction, including by applying incorrect interpretations of the claim language to eviscerate its meaning. For instance, Nearmap appears to disregard requirements associated with the presence of a roof report, having multiple aerial images with different views, or the claimed requirements for creating and projecting a 3D model. While Nearmap's incorrect claim constructions can be disregarded at this stage (which therefore dooms its motion) (*see Aatrix*, 882 F.3d at 1125: when there are "claim construction disputes at the Rule 12(b)(6) stage... either the court must proceed by adopting the non-moving party's constructions… or the court must resolve the disputes to whatever extent is needed to conduct the § 101 analysis"), at a minimum they compel denial of this motion until these issues of claim scope can be resolved (*id.* at 1128: claim construction may be necessary "to arrive at 'a full understanding of the basic character of the claimed subject matter.'"). The Court will benefit from a fully developed record and claim construction to explain the specific area of invention where the patentees' inventive contribution revolutionized an entire field of endeavor.[11]

V. CONCLUSION

For the foregoing reasons, Plaintiffs respectfully request that the Court deny Defendant's motion to dismiss in its entirety.

[11] Additionally, Nearmap's factual assertions regarding the Photographic Intelligence Unit of the British Royal Air Force and various passages from the Bible are outside of the scope of the Complaint and cannot properly be considered at this stage. The '152 and '737 Patent claims include highly complex technological processes involving 3D models, line drawings, and correspondence of features across multiple aerial images—all of which are far beyond the reach of the measurement techniques described in the improperly cited materials.

Dated: August 5, 2021

Respectfully submitted,

/s/ Jess M. Krannich

Jess M. Krannich (#14398)
Trevor J. Lee (#16703)
MANNING CURTIS BRADSHAW & BEDNAR PLLC
136 East South Temple, Suite 1300
Salt Lake City, UT 84111
(801) 303-0034
jkrannich@mc2b.com
tlee@mc2b.com

Adam R. Alper (*pro hac vice)*
Brandon H. Brown (*pro hac vice*)
Natalie Flechsig (*pro hac vice*)
KIRKLAND & ELLIS LLP
555 California Street
San Francisco, CA 94104
(415) 439-1400
adam.alper@kirkland.com
brandon.brown@kirkland.com
natalie.flechsig@kirkland.com

Michael W. De Vries (*pro hac vice*)
KIRKLAND & ELLIS LLP
555 South Flower Street
Suite 3700
Los Angeles, CA 90071
(213) 680-8400
michael.devries@kirkland.com

Leslie Schmidt (*pro hac vice*)
KIRKLAND & ELLIS LLP
601 Lexington Avenue
New York, NY 10022
(212) 446-4800
leslie.schmidt@kirkland.com

CERTIFICATE OF SERVICE

I hereby certify that on the 5th day of August, 2021, the undersigned electronically transmitted the foregoing **PLAINTIFFS' OPPOSITION TO DEFENDANT'S MOTION TO DISMISS BASED ON UNPATENTABILITY UNDER 35 U.S.C. § 101** to the Clerk's Office for the United States District Court for the District of Utah using the District Court's CM/ECF System, which shall electronically serve a copy of the foregoing upon counsel of record for all parties in the above-captioned case.

/s/ Jess. M Krannich
Jess M. Krannich

IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF UTAH

CENTRAL DIVISION

Eagle View Technologies, et al., Plaintiff, vs. Nearmap US, Defendant.	Case No. 2:21-cv-00283-TS-DAO

MOTION HEARING BEFORE THE HONORABLE JUDGE TED STEWART

Monday, November 8, 2021

Time: 1:00 p.m. to 2:01 p.m.

Reported by Teena Green, RPR, CRR, CBC

Orrin G. Hatch United States Courthouse
351 South West Temple, 7.430
Salt Lake City, Utah 84101
(801) 910-4092
teena_green@utd.uscourts.gov

APPEARANCES

FOR THE PLAINTIFF:

ADAM R. ALPER
BRANDON H. BROWN
KIRKLAND & ELLIS LLP
555 California Street, Suite 2700
San Francisco, California 94104
(415) 439-1876
adam.alper@kirkland.com

JESS M. KRANNICH
KIRKLAND & ELLIS
60 East South Temple
Salt Lake City, Utah 84111
(801) 877-8102
jess.krannich@kirkland.com

MICHAEL W. DE VRIES
KIRKLAND & ELLIS LLP
555 S. Flower Street, 37th Floor
Los Angeles, California 90071
(213) 680-8400
michael.devries@kirkland.com

FOR THE DEFENDANT:

NICHOLAS P. GROOMBRIDGE
JENNY C. WU
JACOB M. BERMAN
PAUL WEISS RIFKIND WHARTON & GARRISON
1285 Avenue of the Americas
New York, NY 10019
(212) 373-3000
ngroombridge@paulweiss.com

BRENT O. HATCH
HATCH LAW GROUP
22 East 100 South, Suite 400
Salt Lake City, Utah 84111
(801) 869-1919
hatch@hatchpc.com

November 8, 2021 1:00 p.m.

P R O C E E D I N G S

THE COURT: Good afternoon. We are here in the case of Eagle View Technologies, et al., versus Nearmap. This is Case 21-cv-283.

Representing the plaintiffs in this case we have Mr. Michael De Vries, Adam Alper, Brandon Brown, and Jess Krannich.

MR. ALPER: Yes, Your Honor.

THE COURT: Thank you. On behalf of defendant, we have Brent Hatch, Nicholas Groombridge, Jacob Berman and Jennifer Wu.

Counsel, I was informed that you were inquiring about whether you need to wear your masks. It's entirely up to you. If you're more comfortable with them off, please take them off.

We have one hour, Counsel, on this motion to dismiss by the defendants on an issue that if you are able to enlighten me to the point where I understand everything, you will have performed a miracle. Okay?

It's very clear that this subject is very much in flux and it seems that even the federal circuit cannot agree, most certainly district courts around the country cannot agree, and, therefore, the court is befuddled. I do expect some clarity.

I want to thank Mr. Hatch for the letter which he

sent last week, where he indicated that the federal circuit had recently heard argument on the *Eagle View versus Xactware/Verisk* case. That was helpful.

Mr. Hatch, it is your motion if you'd like to go ahead, please.

MR. HATCH: Your Honor, if it please the Court, Mr. Groombridge will speak for us.

THE COURT: Okay.

MR. GROOMBRIDGE: Good afternoon, Your Honor. I'm Nicholas Groombridge from the Paul Weiss firm for the defendant. And I will certainly do my best to try to enlighten the Court here, inasmuch as that's possible given the state of the law.

THE COURT: I'm curious, your accent, where are you from?

MR. GROOMBRIDGE: Well, I'm -- as Your Honor can probably hear, I'm originally from the UK, but I have lived in this country now for some 37 years.

THE COURT: Where in the UK?

MR. GROOMBRIDGE: I grew up near Birmingham, in the middle.

THE COURT: And I spent two years near Birmingham.

MR. GROOMBRIDGE: Well, Your Honor will know that some of it's nice and some of it's not so nice.

THE COURT: That was true 50 years ago and I guess

it's probably still true today.

MR. GROOMBRIDGE: It hasn't changed in that respect, Your Honor.

THE COURT: Go ahead, please.

MR. GROOMBRIDGE: Thank you.

And we do have -- in the way of intellectual property lawyers, we have a set of slides that we have put together here. And if we can pull that up on the monitor, I will hopefully be able to work through them. And I'll go fairly quickly, mindful of the time we have available, but of course, if Your Honor has any questions, I would love to try to be helpful on that. So this is just generally the roadmap for what I'd like to cover, starting with the law.

The modern law goes back to the Supreme Court case. It has a long history, but the modern law has been defined by the so called *Alice* case, and then what the federal circuit has done in the last eight years or seven years since that decision saying abstract ideas are not patentable.

And there are many, many federal circuit cases, Your Honor. One thing I do want to -- I think bears pointing out is that since *Alice*, this issue of compliance with Section 101 has very frequently come up on Rule 12 motions. And in fact, of all the cases that are cited, Your Honor will see that probably two-thirds of them are one form or another Rule 12 motions, either 12(c) or 12(b)(6).

And with computer inventions, the bucket in to which this seems to fall, the federal circuit has been gradually building out the law, if you will. What they have done is to draw this dividing line between patents in which the computer is simply used as a tool versus patents which in some way make the computer itself work better.

And ones that just use the computer, the preexisting computer, to implement something, some idea, those patents fail the 101 test, versus patents which in some way make the computer itself work better by solving a technological problem.

And in our view, Your Honor, the two patents here -- and we have only brought this motion on two of the eight patents that have been asserted. We think that these two patents fail the test for this exact reason.

And another way -- another sort of approach to this that the federal circuit has pointed to, which we think is entirely applicable here, is patents that fail the 101, you can spot them very often because there's nothing in them that is different from that which could be done by a human being, mentally or with a pen and paper. It's done on the computer and it may be done much more quickly, but it is the same set of steps that could be done by a human being with appropriate pen and paper and time to do it. And we think we'll see here that these patents fall in that category.

And again, here's a case from just ten days ago where

the federal circuit reiterated this dividing line: Does it make the computer itself better? That's okay. Or does it simply use the computer as a tool? That fails 101.

And key to understanding this is also that using the computer can speed things up. It can make them more efficient. That's why we use a computer, but that in itself isn't anything that saves the patent.

For example, if a computer can do long division much, much faster than I can do it, if I can even do it at all these days, but I could sit down with a pen and paper and divide an eight-digit number by a six-digit number. I was taught how to do that. The computer can do it in a fraction of a second.

That doesn't make it an invention. That is simply using the abilities of the computer as a tool. And similarly, if the user's experience -- because the process has been computerized, if that user experience has been improved in some fashion that, too, is merely a result of using the computer as a tool. It doesn't make it past the 101 test.

And with that, Your Honor, as Your Honor will be aware from the briefing, there are two steps here. The first step is whether the subject matter of the patent, claims of the patent, are directed to an abstract idea. And then if they are, we go to step two to see if there's something inventive in it.

And I have the claims here. I certainly don't intend

to work through the sea of words, but the important part I think is for both of these patents, they begin by saying that what has been claimed is a computer-implemented method for generating a roof estimate report. And the language for the '737 patent is slightly different, but it's the same substance.

And what does roof estimate report mean?

Well, the patent and the complaint in this case say a roof estimate report is simply a document that has a picture, usually a top-down view of the roof or part of the roof -- we'll see one in a little while in the slides -- that marks out one face of the roof, for example, a triangle, and annotates it with certain information.

For example, what's the length of each edge of the roof? And why would you do this? You would do it so that, as the name suggests, a roofer could prepare an estimate and say, "I can replace your roof for X thousand dollars."

And so what we've got here is a computerized method for making a report that would traditionally have been made by a human being. And what we wanted to do, Your Honor, is just run through what is this method?

It's dressed up in a lot of computer jargon that is common for this type of patent. And what I wanted to do here is maybe walk through that, if I can, and just try to tease it out and say, "When we strip away the jargon, what is there here?"

So the -- I don't think there's any dispute that the subject matter is what the plaintiff has itself characterized as a computer-driven approach to measuring roofs. And if we look here, Figure 1 lays out the patented computer system that these patents are talking about. And I'd like to just step through that and try and show the Court what's in it, because when we see what's in it, I think it becomes clear that this is nothing more than what could have been done by a human being, with enough time, sitting down to implement these techniques.

And so the first thing here is an image source, aerial photographs. And what the patent tells us is that that can be gotten anywhere. It could be Google Earth, could be any provider of aerial photographs. And there were, of course, many commercial sources of this, companies that would fly planes around, capture aerial images and then sell them. And so the first thing that we're talking about here is simply we need to have some source, Google Earth or otherwise, of aerial images.

And then we go in to the computer system, that's what's shown in this box 100, and it's divided into three parts. And the first part is what's called this image acquisition engine. And that's computer jargon. Engine is what patent lawyers and perhaps computer scientists like to call a piece of a computer.

The cylinders underneath that are the conventional

representation for memory, computer memory. And in case it's useful to the Court, in one of the cases in which the patent was invalid, the federal circuit affirmed the invalidation of a patent, the *Infinity Labs* case, the federal circuit actually cut and pasted into its opinion a drawing, very similar to this one, that shows a box and a cylinder and labels one an engine, and said, "This isn't the level of detail that is sufficiently specific or concrete to satisfy 101." And that's at 838 F.3d 1259, is the pin cite there.

Now, if we look at the drawings here, what's the image acquisition engine? The image data underneath it is just a place of memory, where whatever comes out of that image acquisition engine goes. Well, the image acquisition engine is described like this, Your Honor. It says it's something that "obtains one or more aerial images of the building by providing an indicator of the location," such as the address.

And so that's no different than if I were to call up one of those providers of aerial photographs and say, "Could you send me aerial photographs of my house? I'll buy them from you." And all this is is a computer that does that instead of me having to place a phone call. No more, no less.

And if we move on then to the second part of these three components, it's a so-called roof modeling engine. And we'll talk a little bit more about what does modeling mean here.

Again, it has some memory associated with it, but the roof modeling engine uses what the patent describes as any acceptable algorithm. An algorithm meaning simply a formula, a series of steps, like geometry, to reconstruct the three-dimensional geometry of the roof. And the patent candidly says, "Several such algorithms are described in detail in textbooks, trade journals, and academic publications." We're not going to tell you what algorithms are used in this patent because we don't have to, because people are already using them.

So again, Your Honor, this is something where once you get that aerial photograph and you take the information that you've measured from the photograph, you plug it in to one of these formulas and algorithms and you can get the output. What it constructs is an isometric view, if you will, of the roof. And that was being done and human beings could do it.

The patent actually includes pictures of this. This is Figure 6C. That's a top-down view of a roof. And this model is -- we're looking down at a roof that has three sloping faces, one of which is picked out in a lighter shade and the other two are in gray. And this idea that we're looking down at the roof and we have these lines that surround it, that's the model. That's all it means when it says "model."

And if we go to Figure 6B, we see the same thing in what you might call more of a three-dimensional rendering, kind

of isometric view here, where we can see some perspective. And it is simply that.

And, again, Your Honor, a human being could do this. In fact, I would suggest that architects have been doing this for at least hundreds of years, of creating drawings like this of roofs and other aspects of buildings. And so this so-called modeling engine, all it does is something that takes an aerial photograph and produces this line drawing.

And lastly, the third part, Your Honor, here is described as a "Report Generation Engine." And again, it's got its own associated computer memory. And it says it generates a final roof estimate report. And we see here, Your Honor, that the report typically includes one or more plan, top-down views, annotated with numerical values for the slope of the area and the lengths. It may include more things, but this is what it typically includes.

And, Your Honor, in the complaint, paragraph 132, this is part of the infringement allegation. This is what they say, "Here's the roof report that you, the defendant, create." And I'll just enlarge that a little bit. And you can see here, Your Honor, the roof report, according to the plaintiff here, is nothing more than an image of the roof, one face of it picked out with red lines. And the pitch or slope is listed and the area is listed and the distance around the edge is listed. And they say, "Well, that's the roof report that our

patents are about."

Now, of course, a human being could do this. This is exactly what human beings did; right? This is how roofers would have prepared to give an estimate, presumably would have included this in the estimate.

And so of all the three pieces, each one of them is something that -- just taking the patent at face value and the complaint at face value, this is something that human beings can do. There's no suggestion that computers had a problem in doing this, that there was some aspect of computer memory or processing that was deficient that this patent solved. Right?

All it is, is taking a computer and saying, "I will use the abilities of the computer to process information, to crunch numbers, to speed up the creation of these documents using aerial photographs." And they say, Your Honor, here, in the patent, that this report could be an electronic file or even a paper document. And again, I think it's abundantly clear that as far as the paper document is concerned, this is no different from what human beings have been doing for many, many years before these patents.

There is one other piece that I just want to cover in the interest of completeness. There is a so-called user interface engine where human beings can provide input to the computer. And this is no more, no less than a control panel that includes things like menus. And it says at the bottom,

there are options to, for example, save the model. This would be satisfied by nothing more than a button that you would click on the computer to say "save." Right?

And so what we have here, stripped of its jargon, these are just steps that have been done -- could be done, in most cases have been done, perhaps in more cases have been done by human beings long before these patents, and there's no improvement to computer technology. And so in our view, Your Honor, it is clear that they do not pass the Section 101 test here.

And there is a federal circuit decision from about five months ago, and it's making me feel old because I see that the citation is actually the F.4th, and I realize I'm going to have to get used to writing F.4th, and I still think of F.3d as new.

But this was one where the patent there was about images, photographs. And you see there the federal circuit says, "The abstract idea is taking two pictures and using one picture to enhance the other." And we think, Your Honor, that that is exactly what's going on with the use of aerial photography in the '152 and '737 patents.

It says there that, as we see, a variety of automatic or semiautomatic techniques may be employed to generate that model. For example, a correlation between at least two aerial images. So you can look at one and look at the other and

overlay them and get a better idea of what the actual building looks like by having two images rather than one. And we would suggest, Your Honor, that that is exactly the same thing that was going on in the *Yu* case, where two pictures were being used, one of them in order to enhance the other.

Now, if we turn to step two of the test, we think, again, there's no -- in order to pass step two, there would have to be something inventive in here. And it can't be that which is in the words of the case, as well understood routine or conventional. It would have to be some way in which these pieces have been put together to do a thing that was different from what had been done before.

And the case law, I think here, says that where you just use off-the-shelf conventional computer technology to do what that technology was designed to do, you have not created anything inventive that would pass step two of the test. And the federal circuit here, we see in this *Electric Power Group* case, says, "We've repeatedly held that this is not inventive."

And in fact, there was one, I probably should have put this in a slide but I didn't, but in that case, Your Honor, one extra thing that it says there, and this is -- the pin cite is also 1355. The claims in this case do not even require a new source or type of information on new techniques for analyzing it. As a result, they do not require an arguably inventive set of components or methods, such as measurement

devices or techniques that would generate new data.

We think that that's directly applicable here. The claims here do not require a new source of information. They say, as we saw, just go and order up some aerial photographs from a provider, somebody who sells aerial photographs. And they don't use any new techniques for analyzing it. And that was where we saw it says, "These algorithms, these formula are out there in textbooks. Just go and use one of those." Nothing new here.

And so this patent, for the same reasons that we looked at just now, it would also fail step two.

And I'd like to just -- one last piece of what I want to cover here is just talking about the arguments that Eagle View has presented. If time permits, I will certainly come back, if I have any rebuttal, to address what we're going to hear from them.

But in the briefing, there's an awful lot of focus on this idea that, well, we've revolutionized the industry. And I suspect that when my friend and adversary stands up here that we'll hear more of that. That is irrelevant as a matter of law. It doesn't matter whether the subject in a patent is groundbreaking, innovative or even brilliant. That's the words of the Supreme Court. It doesn't matter if it has life-altering consequences, if it's just one of these abstract ideas, not patentable, right, and for very good reason.

The legal system is designed -- the patent system is intended to protect technology. It's not intended to protect new forms of business, even though they may be great.

And so I'm hearing a lot of things about how this created a new industry and it was groundbreaking, and lots of people have said, "It's just awesome," is undoubtedly true. And certainly, at the motion to dismiss stage, we contest none of that. But maybe as the case goes forward, we will contest it, but for purposes of today, it just doesn't matter.

And another thing that Eagle View says is, "Our inventions," as they characterize them, "are new." Nobody had ever done this before. But that idea of this is new or had been done before, what patent lawyers call novelty, is again irrelevant as a matter of law. The cases are very clear on that. The Supreme Court has said that, as we see in the *Diamond versus Diehr* case from 1981.

And the federal circuit, in the *Yu* case just a few months ago, the fact that something is new, never done before, is irrelevant to this inquiry.

And Eagle view also argues about something called preemption. Preemption is the idea that part of the reason why we have this body of law is to stop patents from sweeping out of circulation the tools of intellectual work that are needed for everybody. You can't get a patent on e equals mc squared, something like that; right? Because it has to be free for

everyone to use. And the idea is that if you got a patent, you would preempt or block the field.

And what Eagle View -- what I understand them to be saying is, "Well, we are not preempting anything. We just claimed a very narrow slice. All we're doing is using these algorithms for making roof estimates." But the case law again says that doesn't matter. Right? If you do preempt the field, that's a problem, but if you don't preempt the field, as we see in this *Ariosa* case, the absence of complete preemption does not demonstrate patent eligibility.

It's an asymmetric test. And so you don't get to say, "My patent is good because I only claimed a little sliver." Even if you only apply that abstract idea to one narrow set of circumstances, like roofs, it's still abstract and it's still ineligible.

And lastly, they say, "Well, even if you don't accept, Your Honor, any of the things that we as plaintiff are saying, this is premature. Let's have discovery. Let's dive into the facts. Let's do some claim construction."

Again, as I mentioned at the outset, the reason why, in the last seven or eight years, this Rule 12 practice has become so widespread is because these cases are large and expensive. And the federal circuit has -- as it says here in this *Cleveland Clinic* case, repeatedly affirmed decisions throwing out patents at the motion to dismiss stage. And it's

not premature unless you can point to some specific issue that would require action by the Court. For example, a dispute over the meaning of a particular claim term.

Your Honor, we only moved here on two of the eight patents in this. We think that many of the other patents, possibly all of them, have similar problems, they don't pass the 101 test. But we recognize, with respect to the other six patents, there may very well be disputes that the parties have to work out. These two we picked because there are no such disputes, and in the briefing, with utmost respect to Eagle View, they didn't raise any. They said it was premature but they didn't point to anything that needed to be decided, and the case is ripe for that now.

One final thing I want to touch on here is the -- there's a great deal of reference in the briefing to the New Jersey decisions and to what happened. And Your Honor mentioned that Mr. Hatch had sent that letter last week alerting the Court.

About a month ago, there was argument in that case and the argument is recorded. And we picked out this as a -- just a -- what we think is a representative sample of it. Of course, one can't overread or overinterpret argument, but I think any fair observer of that argument would say that the federal circuit expressed considerable skepticism.

By the way, Your Honor, there were four or five

issues in that appeal. The only one that the federal circuit wanted to hear about in oral argument was Section 101. The entire argument was about that.

THE COURT: Which raises a question I want to ask you, Counsel, is: Can I expect much help to come from a decision in that case from the federal circuit?

MR. GROOMBRIDGE: The answer, Your Honor, is this Court cannot. And the reason is because on Friday, Eagle View settled that case. And I can't look in to why they did that, but I think it was pretty clear to all concerned that the federal circuit wasn't viewing this the way that the New Jersey court had viewed it. And in fact, part of the settlement, we understand, the ink is barely dry on it, is that the two sides, Eagle View and the defendant there, Verisk, have asked the New Jersey court to withdraw all of its rulings as part of the settlement. So I don't think, Your Honor, there will be anymore guidance for this Court from the federal circuit.

THE COURT: So if I was looking for an excuse to punt, you just blocked me; right?

MR. GROOMBRIDGE: I'm sorry to have to say that Your Honor is totally correct on that. And it came as a surprise to us when we heard of the settlement. We had thought that it might be the case that it would make sense to wait and see what the federal circuit did. It turns out that neither the Court nor Nearmap, the defendant, will have the benefit of

that.

And so that is what we have. I hope it has been of some help. If Your Honor has any questions, I'm -- of course, any further questions, I'm happy to take a stab at answering.

THE COURT: I don't at this point, and you'll have about five minutes for rebuttal if you request it at the end. Okay?

MR. GROOMBRIDGE: Thank you, Your Honor. I appreciate it.

THE COURT: Thank you.

Mr. Alper.

MR. ALPER: Good afternoon, Your Honor.

THE COURT: Good afternoon.

MR. ALPER: Maybe I'll start with where we just left off, which is the *Verisk* case that came out of New Jersey and was before the federal circuit. So that appeal was -- the parties did file for a dismissal of that appeal on Friday. They've settled their differences.

We have a very different perspective on the federal circuit hearing and the direction of the issues in that case. But those parties have been and continue to be business associates and found a pathway to resolve their differences. It's part of a confidential settlement, so I'm not at liberty to discuss details with respect to that, but you are correct, the federal circuit will not be providing guidance with respect

to that appeal.

I would like to use that as a touch point to begin. What I think I would like -- what I'd like to do, Your Honor, is provide just a little bit of background on Eagle View for a little context of where that case comes in. And then get into a background of the technology and ultimately roll that up to the patent claims, and the step one, step two *Alice* analysis. Because as I think you'll see, we believe that -- we have a very different perspective from Nearmap on the state of the law, and also how the patent claims here relate to the legal principles underlying the Section 101 analysis.

So if I'm going to start anywhere, I'll start with Eagle View. So Eagle View is a company that makes computer systems products and so forth, that practice its patents, including the technologies that we're going to talk about today. And it began originating those technologies in the mid-2000s. It launched them about a year or so later, and provides these measurement technologies in the way of various products, to insurance companies and contractors who use them to build and reconstruct roofs.

Shortly after that, and we'll talk about this a bit, you may have seen it in the briefing, the industry really took note of this revolutionary approach to accomplishing those things. And one of the companies that took note is a very large company, a multi-multibillion-dollar company called

Verisk. They're the defendant in the New Jersey case.

They originally attempted -- they wanted to acquire the technology. They're an insurance base. They wanted to acquire the technology. They intended to purchase Eagle View, and when that failed, they copied the technology. That led to the District of New Jersey patent lawsuit, which was filed in 2015. And that culminated with a jury verdict against Verisk in favor of Eagle View in 2019.

And then Judge Bumb there immediately issued an injunction against Verisk and they've been enjoined ever since. And the reason I'm providing that history is a couple-fold. We'll touch base a little bit later on some of the decisions that came out of that case, both before the trial and after the trial.

But also, when Verisk was enjoined, they were the only competitor to Eagle View at the time. And they're a very large company and that created -- although Eagle View has the ability to satisfy the demand, that created a little bit of a void. And there were a couple of other companies that then cropped up in that space that Verisk left, and one of them is Nearmap over the last year, and that led to this lawsuit.

Nearmap copied -- has a copy of Eagle View's technologies. They are now a competitor with Eagle View, jumping in to fill the void, and that led to this patent infringement lawsuit.

So what I'd like to do is -- I have some slides. I have paper copies I could hand up, Your Honor, and we could also put them on the screen if you'd like. I'm happy to hand up --

THE COURT: I do want a paper copy before we're done, but I will look at the screen.

MR. ALPER: Okay. If I may approach, Your Honor --

THE COURT: Please.

MR. ALPER: Thank you.

So what I'd like to do now, Your Honor, is provide a background to the technology and then walk through a description of the technology. We, again, have a very different view of the technology. I'm going to do it in relation to figures in the patents that ultimately roll up to the patent claims, which I want to take a look at in a very specific way, because that's ultimately what Your Honor will be evaluating when you do your analysis.

So we go to the next slide, slide two. And this is all about damage to roofs in many ways.

So obviously, storms come along that can have, you know, a very destructive impact on roofs. And in the prior art, the way that you would address that, if we go to the next slide, is folks would call their insurer. Their insurer would then call a contractor and say, "Hey, go out to this house and get me measurements of the size of the roof, the surface area

of the roof. So that way, we can obtain an estimate for the cost of repairing that roof, total cost of materials and so forth."

So the contractors would go out and do that. They'd ultimately give that information to the insurers and the insurers would assess the claim.

There were problems with this prior art approach. And by the way, this is all in the record of the complaint. It's also in the patent that we're addressing. And so this is all intrinsic for purposes of a motion to dismiss, everything that I'm showing you here. We put cites at the bottom of the slides to the complaint and the patents and elsewhere for ease of reference.

So there's problems with the old approach. And one of them is when roofing contractors would go up on the roofs, it would be hard for them to get around to various different areas of the roof so they'd basically guesstimate. They'd eyeball it. And that would lead to, you know, inaccurate estimates.

And in particular, oftentimes what they would do is -- and this is all part of the record, and certainly part of the trial record in the New Jersey case. They'd overestimate, so they'd shoot high. And what that did is that caused the overall estimate to be more expensive than it would need to be. By ordering too much material, it would cause the insurers to

have to pay more than was needed.

That ultimately creates a massive amount of loss in terms of money, and not just -- it's billions of dollars to the insurance industry, which then trickles down to the homeowners in the form of increased premiums. And so that was a big problem. It's not just inaccurate measurements, but actually, a real world impact on the insurance economy.

And that's not the only problem with this approach. If we go to the next slide, climbing up on roofs are incredibly dangerous. Contractors fall down all the time, particularly when there's damage to the roof.

Also, when you have a storm, oftentimes it's not just hitting a single house, it's taking out not just neighborhoods but entire cities. And when that happens, the contractors, they just can't get around to all of the houses. They have to drive distances to get to the places that are affected, and you can imagine what that means. It's when you're sitting there and you have a giant gaping hole in your roof and weather is coming in, you want to get someone out there immediately so the insurance company can assess the claim and then approve the fix.

But what would happen in the prior art, and this is all documented in the intrinsic materials and the patents, is that you'll have to wait for weeks for someone to come out, because of this manual approach to climbing up on the roofs and

so forth.

If we can go to slide six, some of this I won't take up time here, but some of this is laid out in the background of the patents as some of the problems. Others of it is in the complaint because, as we were able to develop the testimony in the prior case, this all came out as part of the facts, which again underscores the importance of moving this forward past the motion to dismiss phase.

So what did Eagle View do to solve that problem? Well, they came up with a revolutionary approach that is completely different that what was done ever in the past. There is zero evidence, after an entire other litigation and an entire other trial, that anyone has ever done it manually or that anyone could ever do it manually with a pen and paper. And what they invented was an all new computer system in order to address the problems of the past.

So I want to walk you through some of the aspects of that that are applicable to the two patents that are at issue here.

So the Eagle View inventions and the patents that we're addressing here start with aerial images, but not just any aerial images, at least two different aerial images that are taken from different views. And in the examples of the patents, you've got one that's a direct top-down view and you've got another one which they call an oblique view, or you

also see it in patents referred to as a perspective view. And that's very important and it's something very specific. And actually, I'm going to show you, Your Honor, that distinguishes what came before, even in the science of aerial imagery.

So Eagle View starts there. And if we can go to the next slide. The first thing they're going to do is they're going to create a three-dimensional model of the roof. And they're going to do that with some very specific techniques involving the registration of points on images that I'm going to explain to you.

This is -- by the way, I'm going to show you, this is all in the claims. Everything I'm showing you is going to show up in words in the claims.

And then after that, once they have their three-dimensional model, from which they can derive measurements, they took it to the next level. So they have a computer system now that can create this three-dimensional model and produce measurements, but then they said that wasn't good enough. They realized through their experience that it wasn't quite this level of accuracy they wanted, so they came up with a completely additional improvement to that computer system that allowed for greater accuracy with those measurements. And I'm going to take you through those two steps, both are applicable to the patents that are at issue in Nearmap's motion.

So we start with -- this I'm showing you, one image, it's a top-down image, I'll get to the second oblique image in a minute. What the patents say is you're going to start by registering points on the image to a three-dimensional grid. And what you do is it starts off, it has a user interface tool that can be displayed. This is all part of their specialized software. This is not just like Microsoft Paint or some average software that just shows up on a generic computer. This is all specialized software that Eagle View created.

So they put these -- display these markers on the photo. And then an operator can move the markers, the points, those are those black dots, to points on the roof. And I've shown that in the second picture on the right, that's Figure 4C, and that's what the claims refer to. We'll look at the claims in a bit. That refers to providing an indication of roof features via markers.

THE COURT: How is the image in Figure 4B created?

MR. ALPER: The image from 4B is taken from a -- typically from planes, but it can be any -- you can take the image from any --

THE COURT: It appears, though, that the image that's over Figure 4C was created independent of 4C. Is that true?

MR. ALPER: Correct. So the photographs that are in 4B and 4C, that came from a plane --

THE COURT: Sure.

MR. ALPER: -- that flew --

THE COURT: I understand. All right. Go ahead.

MR. ALPER: So --

THE COURT: I don't know how involved it is, but you go ahead.

MR. ALPER: And I would like to answer your question, Your Honor.

So 4B shows a picture of the computer screen of the invention that the operator is looking at.

THE COURT: I understand that, but you have a grid on 4C -- excuse me, 4B, that appears to then match 4C. And I just wondered how the grid in 4B was created that then matched 4C.

MR. ALPER: So the grid is part of the software that is presented by the software to the user. And then what 4C is showing is the user has now moved that grid over --

THE COURT: How did they create the grid?

MR. ALPER: How did the grid get created? It's part of the software programming --

THE COURT: Okay.

MR. ALPER: -- as described in the patent.

So the grid is a series of points that is displayed on the screen. And then the user can manipulate those points to make it essentially fit points on the roof.

THE COURT: All right. Thank you.

MR. ALPER: And so underneath this is a data

structure referred to as the "reference grid." And what the system does is when you move the points on to these points on the roof, it registers those points with this three-dimensional reference grid, it's a data structure. I think of it as underlying the pictures, but it's a data structure in the computer system.

And then as you do that for more images from different perspectives, so you get -- like an angle view gives you a little more depth, and you put these points on. Those get registered to this three-dimensional reference grid. And then from that, that creates, actually builds the three-dimensional model of the roof.

And if we go to slide eight, Your Honor, I've shown where it describes that in the specification. You start with the markers, which are these user interface controls that are provided up on the screen. You then -- it tells you the user directly manipulates those by putting them in places on the roof.

And then a uniform three-dimensional reference grid is used as a coordinate system, that that is -- that those points are attached to. And from there, the system can then -- you're actually creating the three-dimensional model of the roof in the system, as you put these -- move the points on to the photos, which is then corresponded to a reference grid.

I showed you a top-down image there a moment ago. If

we go to the next slide. Top-down images, like the one I'm showing on the left, don't provide for a, you know, height. You can see that there's a roof, but you don't see, for instance, how high, you know, the pitch of a roof is. It could be very low and so forth.

So that's why -- if you go to the next slide -- you need to use one of these oblique perspective photographs. And the user interface tools allow you to set slope and height of the roofs when you're looking at it from an angle. And then those, again, are registered with the three-dimensional grid. And then that is then used to create the three-dimensional model.

And then once you have the three-dimensional model, we go to the -- well, no, actually, stay on that.

So once you have the three-dimensional model the patent describes -- the claims that we're dealing with here, at least some of the claims don't talk about, you know, deriving actual measurements. The patent describes how you derive measurements from the three-dimensional model. So that is how you come up with the three-dimensional model. That's how you can then derive measurements.

Then the patentees, Eagle View, said, "Okay, that's good," but they found that that wasn't quite accurate enough for them. So if we go to the next slide, they then came up with a technique where they apply these wire frames to photos

having different views.

So I'm showing the top-down on the right in Figure 6B and an oblique perspective on Figure 6C. And Figure 6B is an oblique perspective. And what that essentially allows the user to do is, when you make adjustments from one view, it will -- because there are -- those photographs are registered to your grid, and there's a correspondence between them, it will automatically then make a similar adjustment on the other photo.

And if we go -- so you make a manipulation on one. You look at the other photo in another screen and it will make the corresponding change to that photograph.

And if we go to slide 12, this the patent describes as having a lot of different -- you know, many different advantages, including it gives the user feedback as to the accuracy of the model that they're creating. And it allows them to have a very, as they call, fluid, near real-time approach to increasing the accuracy of the model they have.

So all of this, Your Honor, if we can go to slide 14, then is -- from this, you can then produce accurate roof measurements. These are then put in these roof reports. We are annotating the length and the slope of the various different aspects of the roof with photographs or schematics, like I'm showing on this slide.

We go to the next slide. When this technology was

released, it was, you know, very quickly recognized as revolutionary. Nothing like it came before. Before, people were doing something very different. They were climbing up on to roofs and taking actual kind of manual tape measurement type things. There was no software user interface tools like this. There was no three-dimensional model that was being created. There was no corresponding changes to make it more accurate. None of that was around.

And so that obviously led to incredible advantages, including immediately being able to produce roof estimates just based on photographs that you have on hand for a given house or an entire neighborhood or entire city that needs them.

THE COURT: Mr. Alper, I need to -- you have ten minutes left. Okay? I've had my roof replaced twice, once the old way, once the new way, so I think I understand it.

MR. ALPER: Okay. Thank you very much, Your Honor. Okay.

So what I'd like to do is to go to slide -- if I could go to slide 20. And here's a -- here is one of the claims that are at issue.

So all of these techniques are actually claimed in the claim. So you have -- if you start down at the bottom, the Patent Claim 10, that's where it talks about that registration process, putting the marker on an image, receiving an indication of a point on an image, and then registering that

image to a reference grade corresponding to a 3-D model. So it's all in the claim specifically.

And then the rest of it's there, too. Images having different views, receiving an indication on one image that then leads to a corresponding change in the other image, and a corresponding change to the 3-D model for purposes of accuracy.

And these are all things that -- I think there's a couple of different points to make here.

Nearmap says that Eagle View in its claims don't show how. They absolutely show how. This is walking through a very specific set of steps in order to create a three-dimensional model of the roof, using different types of images, using specific user interface tools and showing you exactly how to do it by registering them to grids and so forth.

So that is definitively there. It's not just an image acquisition engine, it's not just a roof measurement engine. It is actually laid out very specifically in the claims.

They pointed out that -- they say that this can be done with a pen and paper, but like I said, there's absolutely no evidence of that in the record whatsoever. And after an entire other trial, an entire case, the prior judges found that no one has ever done it and that it can't be done with pen and paper. You actually need to use a computer to do it. And that is what this patent is describing doing.

And the third thing I'll say, and then I'll just make a few other points with the remaining minutes of my time, is that Nearmap says that this is just using the computer as a tool. But there's a real distinction there between, you know, using a computer as a tool and the claims that use a computer as a tool, and the claims that actually create a computer system or improve the functionality of a computer system. And this is definitively the latter.

So claims that use a computer as a tool are like the economic processes, you know, the financial processes, business processes that you're just throwing on to a computer in order to make it faster. And one of the cases, in fact all of the cases I believe that counsel showed you with some of those high-level quotes are about that, or something very similar.

This is very different. This is actually a very specialized software. It's not something that you can just flip on a computer with Microsoft Windows or something like that and be able to do. It's a specialized software with these very particularized user interface tools that create -- that are operated in a very specific way with this reference grid that's built into the system, that creates the three-dimensional model and so forth.

And by the way, the inputs are very specific, the images which are specified to have two different views, which was something that was very different than the prior art. So

all of that leads to -- this isn't like we're just saying something that was done in the past by people, which none of this was, "This was something that was done in the past by people and they were just throwing it on a computer, now it can do the same thing faster." This was done -- none of this was done in the past. A very different system than, as Your Honor pointed out, you're familiar with, people climbing up on to roofs. And that's not what's happening here. And I can show you an example of this.

If we go two slides forward. Although, we shouldn't be considering this for purposes of motion to dismiss, this is one of the pieces of prior art that Nearmap raised in its briefing. It's Exhibit 3 of their briefing. They say the British Royal Air Force was doing this for decades before the patent inventions, but there you can see why these are specific and concrete claims that claim not an abstract idea, not the general big idea of using aerial images and user -- you know, and allowing people to take measurements, but an actual specific way that was different than the past.

And the British Royal Air Force, they were doing a reconnaissance on, you know, structures on the ground and they used what were called, and this is in that reference, stereoscopic images, which are the same image with some overlap. And they had planes that flew and took those same images with some overlap.

And what Eagle View determined was that was a problem because you had to have these very particularized images that had a very particular type of overlap in order to use for that approach. So what Eagle View came up with was a different approach that allowed you to use any database of images so long as you have them from different views. And that was incredibly different than anyone had come up with in the past, and it's in the claims of all of these patents.

And that right there, although there's many other aspects of the claims that make these patents nonabstract, that is a very specific detail that's there. And by the way, if we go to the next slide, slide 23, counsel showed this. He said, "Yeah, the images can come from any provider of images." That's right, because that was an advantage to using images of two different views as opposed to the stereoscopic images, which you could only get by flying a specific type of plane that captured those overlapping images. And that's an advantage of this invention and it's actually claimed specifically in the claims.

Your Honor, I probably have only a few minutes left. I do want to just point out a couple of things.

By the way, I'm referring to step one here, but it also pertains to step two, because these are enhancements over the prior art.

THE COURT: I would point out, this is going to be

decided at step one. I don't think we're going to get to step two.

MR. ALPER: Okay. Thank you, Your Honor.

So then if I may, Your Honor, just really fast, a couple of legal points on step one.

So if we could go to slide 27, the cases on this -- this is not computerizing on a general purpose computer fundamental economic practices or mathematical equations, it's actually a very specific and concrete, you know, set of inputs, with the photographs and user interface structures.

And then I want to make this point, Your Honor, because I think it's very important. User interface tools, like the ones that are in these claims, are patent eligible. There is nothing in any of the briefs that -- cases in any of the briefing, and we're not aware of any cases that user interface tools like these, that you can manipulate, have been found to be patent ineligible. In fact, they've been repeatedly confirmed to be patent eligible.

So just because you have something on a screen, it's no different than if somebody had a tool for like farming equipment or something like that. It's just implemented on a computer and that's key. And let me show you an example of that on slide 28.

This is the *Core Wireless* case, Your Honor. So in this case, you can see those pictures down at the bottom. What

was claimed was a menu on an old cell phone, and you can click through the menu. And you'd click on one of those menu items, like messages, and it would pop up what they called an application summary, which is basically just a little more information about that particular menu item.

And if we go to the next slide, that was the user interface tool in that case. And what the federal circuit says there, right there, is that these claims are directed to a particular manner of summarizing and presenting information and they're not abstract. This is an improvement over prior systems.

So what we have in our patents here is way more specific, way more inventive and way more nonabstract than what we have there. And it's laid out very specifically in the claims.

There's one other point, Your Honor -- and that's, by the way, in contrast, we go to slide 31 and make two more points, Your Honor, before I run out of time.

This is a case that -- just to show you kind of how to chalk the field on this. This is a case, the *University of Florida* case, that Nearmap has cited. Here it was just about receiving data, medical data, from medical equipment and then essentially displaying it, to making it available to physicians, who can then take an action. They can click a button that says "display the data," and then it would display

the data. Just basically collecting information from medical equipment and making it available to display for the physicians.

And there the federal circuit says -- this is the quintessential do it on a computer patent. This is using a computer as a tool. Right? This isn't creating a real user interface tool that you actually can use, like the ones in the Eagle View patents, and that actually are then connected with three-dimensional models, and the reference grid and so forth, which is specifically laid out in the claims.

But the remaining points that I want to make, Your Honor, is if we go to slide 35, counsel says that because it was done with the old climbing-up-on-the-roof approach, that means that we can't get a patent on this totally different approach because it was done manually back then. That is absolutely untrue.

The *McRO* case from the federal circuit rejected that. In that case, the entire claimed approach was done by people by hand, they'd go through -- this had to do with computer animating faces that would speak words. And they would go through frame by frame in order to make the lips move in connection with the words they called phonemes. And all of it was done manually.

And what *McRO* came up with, all they did is said, "Let's use rules to automate that." And you can see it in the

claims, that's all they said, "First set of rules, let's add these rules in to do it automatically. And by using the rules, the computer will digest those rules and then be able to do this in a better way than manually, and not this time-consuming way."

The federal circuit said, "It is fine to have a computer do something if it's a distinct approach, to do something that was done manually previously, if it's a distinct approach from the manual approach."

And that is a very clear holding of *McRO* and it is absolutely important law today, and clear law in the federal circuit. And that is really a touchstone for us here, because in this case, you know, there was a very different way of doing it manually, completely different way in these patents of doing it. And *McRO* says, "That is patent eligible. That is a strong indicia that these claims are not abstract."

And finally, Your Honor, I should touch on the *Yu versus Apple* case, because counsel spent some time on that. And if I could go to slide 37, this one is easy to dispose of. It has nothing really to do -- other than the fact it deals with images, it has nothing to do with what we're talking about here.

If we go to 38, please. This was undisputed, and you can see it right in the appellate decision. The only thing that was an improvement in this -- alleged to be an improvement

in this claim is what I've highlighted in yellow. And that was the use of one image to enhance a second image or use of a second image to enhance a first image, and everything else in the claim was conventional camera equipment, and all of that was undisputed.

And you can see it in the federal circuit. They say, "Yu does not dispute that the idea and practice of using these multiple pictures to enhance each other has been known for a century." And it has admitted that everything else was conventional. And in fact, the Yu Patent itself said that it was attempting to achieve a generic solution.

So while that patent may touch on the use of images, it has absolutely nothing to do with what we're talking about here, where in fact, Judge Bumb and Judge Kugler, who -- by the way, we're not saying that that's binding on you, of course. But in patents dealing with overlapping concepts, so certainly they're addressing these very same concepts here -- these patents are a little more specific, in fact, and have additional requirements, but they were addressing the same exact concepts on a full record. And what they found was that actually, it's not conventional, it's not -- certainly not abstract. And that these are new and different ways, specific ways, of implementing the approaches that Eagle View were striving to achieve.

THE COURT: Thank you, Mr. Alper.

MR. ALPER: Thank you very much, Your Honor.

THE COURT: I apologize for rushing both of you but two things, number one, your briefing, both of you, is excellent.

Number two, I have a criminal case in a minute, in fact right now, and we only have a window at the county jail where these defendants are brought in. So I can't be much longer, but I do have to give him five more minutes.

MR. ALPER: Yes, Your Honor. Thank you very much for listening to us and hearing us. Thank you.

MR. GROOMBRIDGE: And yes, thank you, Your Honor, for even affording us this time. It's actually very nice to be back in court in person. So I will try to use my time judiciously.

So just to follow up on a few of the things that Mr. Alper said, the relevant comparison here is not climbing up on a roof. It's could I call up and order two sets of aerial photographs? Having received them, could I apply those known algorithms? And having done so, could I prepare -- make some measurements and prepare a roof report? All of that can be done with a pencil and paper or by a human and a phone.

And one of the things that in our view went wrong in the New Jersey case was the comparison was said to be climbing up on a roof. That's not what we're talking about.

Now, the reference grid and the marker, just to talk

a little bit about that. The marker is simply a point where the user can click and identify a point for the purpose of saying -- I've got my two photographs. I want to tell the computer that a particular feature in this photograph is the same feature in that photograph. And the patent tells you, could be anything, could be the ridgeline, could be the corner of the roof, could be a swimming pool, could be a boulder, could be a tree.

All that marker is, is you click on it and tell the computer, the tree in that photograph is the same tree as in that photograph. Registering it to the grid, the grid is just latitude and longitude, which by definition could be done with a ruler and a pencil.

All we're saying there is when I tell you the tree is at X in this direction and Y in this direction in this photograph, the tree -- it's the same tree in that photograph, so you can line them up. That's all this is, is fancy speak for telling you how to line the same thing up in two different images.

And then you use euclidean geometry, called euclidean because it was done by the ancient Greeks, to make those calculations and figure out the dimensions of the roof. And that's all that's going on here.

Now, we heard a lot about things that aren't in the claims; fluid, near real-time, increased accuracy, stereoscopic

images. None of that is in these claims. If what's in the claims were enough to satisfy 101, there would be no need to start talking about things that aren't in the claims.

And we heard about the insurance industry saving billions of dollars. I don't doubt that that's a good thing and it's good for society. That's not what the patent system is for.

And we heard about the statement that user interfaces are patent eligible. We disagree as a matter of law and, Your Honor, we would direct the Court to the *Trading Technologies* case, which is on this very point, and it's 921 F.3d 1084, where the entire point was, there's a new user interface that helps a broker buy and sell securities better. Is that patent eligible? And the answer is no. It helps the broker be a better broker, but it doesn't help the computer be a better computer. And that's not patent eligible.

And so the statement that user interface tools are patent eligible is, in our view, an incorrect statement of the law.

And I think with all of that, Your Honor, that probably covers everything that I had here in my notes. So unless Your Honor has further questions, it may be time to get up and grapple with everything.

THE COURT: I don't, Counsel. Thank you.

The court will take the matter under advisement and

will issue the ruling as soon as I can. I appreciate it from all of you.

MR. GROOMBRIDGE: Thank you, Your Honor.

MR. ALPER: Thank you, Your Honor.

(Concluded at 3:01 p.m.)

CERTIFICATE OF COURT REPORTER

This is to certify that the proceedings in the foregoing matter were reported by me in stenotype and thereafter transcribed into written form;

That said proceedings were taken at the time and place herein named;

I further certify that I am not of kin or otherwise associated with any of the parties of said cause of action and that I am not interested in the event thereof.

In witness whereof I have subscribed my name this 8th day of November 2021.

Teena Green

Teena Green, RPR, CSR, CRR, CBC

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NEARMAP US, INC.,
Petitioner

v.

PICTOMETRY INTERNATIONAL CORP.,
Patent Owner

IPR2022-00735
U.S. Patent 8,593,518

PATENT OWNER'S PRELIMINARY RESPONSE TO PETITION UNDER 35 U.S.C. § 313 and 37 C.F.R. § 42.107

TABLE OF CONTENTS

I. Introduction....1

II. Overview of the '518 Patent....2

III. Petitioner's Grounds 1A and 1B Fail Because Petitioner Does Not Show the Prior Art Renders the Claims Obvious....9

A. Overview of Snavely....9

B. Overview of Balfour....12

C. Overview of Irani....13

D. Petitioner Fails to Demonstrate Claim Elements of each of Independent Claims 1, 13, 14, 15, and 16....14

1. Petitioner Entirely Fails to Show How Petitioner's Proposed Combination Satisfies Elements of Independent Claims 1, 13, 14, 15, and 16, Including Petitioner's Own Claim Definition....15

2. Petitioner's Proposed Combination of Snavely, Balfour, and Irani Necessarily Cannot Meet Petitioner's Own Claim Definition....21

E. Petitioner's Proposed Reasons for Combining Irani with Snavely and Balfour are Fatally Flawed....22

1. Irani Teaches Away from Petitioner's Proposed Combination Because Irani's Techniques Are Not Suitable for Use with the Collections of Unstructured Oblique Images of Snavely and Balfour....23

2. Petitioner's Proposed Combination Would Destroy the Intended Function of Snavely....25

3. Balfour Explicitly Teaches Away from Petitioner's Proposed Combination....27

4. Irani's Teaching of Aligning Each Frame of a Mosaic to a Common Coordinate System is Irrelevant to the Display of the Individual Oblique Images of the Combination of Snavely and Balfour....29

IV. Petitioner has Failed to Establish that its primary reference, Snavely, is Publicly Available Prior Art to the '518 Patent....30

A. Petitioner provides no evidence tying Snavely to the July 2006 edition of *ACM Transactions on Graphics*. 31

B. Petitioner provides no evidence showing when any library actually received the July 2006 edition of *ACM Transactions on Graphics*.....35

C. Petitioner provides no evidence to explain how Snavely was indexed or catalogued in 2006. 37

V. The Board Should Deny Institution Under the *Fintiv* Framework....39

A. Factor 1 is Neutral (Likelihood of a Stay)....40

B. Factor 2 is Neutral (Timing of Trial)....40

C. Factor 3 Favors Denial (Investment in Parallel Proceeding) 40

D. Factor 4 Favors Denial (Overlap of Issues) 41

E. Factor 5 Favors Denial (Overlapping Parties)....41

F. Factor 6 Favors Denial (Other Circumstances)....42

VI. Conclusion 43

VII. Certificate of Word Count 44

PATENT OWNER'S EXHIBIT LIST[1]

August 5, 2022

EX2001	Declaration of Dr. Chandrajit Bajaj Declaration
EX2002	*Curriculum Vitae* of Dr. Chandrajit Bajaj
EX2003	Complaint, *Eagle View Technologies, Inc. and Pictometry International Corp. v. Nearmap US, Inc.*, No. 2:21-cv-00283, ECF No. 2 (D. Utah May 4, 2021) (Oberg)
EX2004	Amended Patent Case Scheduling Order, *Eagle View Technologies, Inc. and Pictometry International Corp. v. Nearmap US, Inc.*, No. 2:21-cv-00283, ECF No. 99 (D. Utah July 26, 2022) (Oberg)

[1] Citations to non-patent document exhibits are to the original page numbering in the exhibits, unless the Bates-stamped page numbers are specifically referenced.

I. INTRODUCTION

Patent Owner, Pictometry International Corp., submits this Preliminary Response under 35 U.S.C. § 313 and 37 C.F.R. § 42.107 in response to the Petition for *Inter Partes* Review ("Petition") challenging claims 1-16 of U.S. Patent No. 8,593,518 ("the '518 Patent") (NEARMAP-1001).

First, the Board should deny institution because—even assuming that the teachings of Snavely, Balfour, and Irani were somehow combined as proposed by Petitioner—the resulting combination fails to demonstrate all of the recited elements of the independent claims of the '518 Patent. More specifically, even when combined the references fail to disclose or suggest "*displaying the primary oblique image and the at least one adjacent secondary oblique image on a same display … wherein the primary and secondary oblique images match the perspectives from which the primary and secondary oblique images were captured*," as similarly recited by each of the independent claims. In fact, Petitioner entirely fails to show how Petitioner's proposed combination satisfies Petitioner's own definition of this claim language. Further, Petitioner's alleged reasons for combining the references directly contradicts Petitioner's own definition.

Second, the Board should deny institution because Petitioner's proposed reasons for combining Irani with Snavely and Balfour are fatally flawed for

multiple reasons, including because (1) Irani teaches away from Petitioner's proposed combination, (2) Petitioner's proposed combination would destroy the intended function of Snavely, (3) Balfour teaches away from Petitioner's proposed combination, and (4) Irani's teaching of aligning each frame of a mosaic to a common coordinate system is irrelevant to the display of the individual oblique images of the combination of Snavely and Balfour.

Third, the Board should deny institution because Petitioner has failed to establish that Snavely is publicly available prior art to the '518 Patent. Petitioner relies solely on the Declaration of Jacob Munford to allegedly provide authentication and public availability evidence for Snavely. However, the Munford Declaration is entirely insufficient to authenticate and prove the public availability of Snavely prior to the critical date of the '518 Patent.

Fourth, the Board should deny institution under 35 U.S.C. § 314(a) because institution of this Petition would be a significant waste of resources for the Board, the parties, and the district court.

II. OVERVIEW OF THE '518 PATENT

The '518 Patent is directed to a computer system for continuous panning of oblique images that "uses a methodology whereby separate oblique images are presented in a manner that allows a user to maintain an understanding of the relationship of specific features between different oblique images when panning."

NEARMAP-1001, Title, Abstract, and 1:14-18. The Background section of the '518 Patent explains that—prior to the invention of the '518 Patent—images capturing views of a geographic area were generally presented to a user in two formats: (1) an ortho-mosaic image or (2) a series of individual oblique images. NEARMAP-1001, 1:22-3:57.

With respect to ortho-mosaic images, the '518 Patent explains that "a rectilinear grid is used to construct an ortho-mosaic image and the ortho-mosaic images are manufactured to provide a consistent perspective (straight down)." NEARMAP-1001, 3:17-19. As a result, "it is possible to create the appearance of a continuous, seamless image by simply displaying such images adjacent to one another, or by overlapping them" as an ortho-mosaic image. NEARMAP-1001, 3:19-22. The '518 Patent further explains that "[s]uch an appearance allows users to remain oriented when navigating between images since the appearance and orientation of a road, building, or other feature remains very similar from one image to the next." NEARMAP-1001, 3:22-25. However, the '518 Patent further notes that since the appearance of an ortho-mosaic image is "dictated by mathematical projections instead of the normal appearance that a single camera captures and because they are captured looking straight down, this creates a view of the world to which we are not accustomed." NEARMAP-1001, 2:10-14. Thus, "many people have difficulty determining what it is they are looking at in the

[ortho-mosaic] image." NEARMAP-1001, 2:14-15.

In contrast to ortho-mosaic images, the '518 Patent notes that "[s]ince an oblique image, by definition, is captured at an angle, it presents a more natural appearance because it shows the sides of objects and structures—what we are most accustomed to seeing." NEARMAP-1001, 2:26-29. Additionally, the '518 Patent discloses that "because oblique images are not generally ortho-rectified, they are still in the natural appearance that the camera captures as opposed to the mathematical construction of the ortho-mosaic image." NEARMAP-1001, 2:29-32. The '518 Patent further explains that "[b]ecause oblique images are not grid aligned and can be captured from any direction a feature on one image will not look the same on another image" and, therefore, "the common practice in the industry is to provide oblique imagery as a series of individual images within which the user can pan." NEARMAP-1001, 3:26-53. That is, "[t]o see beyond the limits of an image the user needs to cause another image to be loaded; they can then pan within that image." NEARMAP-1001, 3:53-55. Thus, the '518 Patent notes the problems of panning oblique images— "panning oblique images in a continuous manner is fraught with problems and unlikely to provide a useable means of navigation using the current state of the art." NEARMAP-1001, 9:31-34.

To address these issues, the invention of the '518 Patent "allows for separate obliquely captured images to be panned in a continuous fashion."

NEARMAP-1001, 3:61-62. In this regard, the '518 Patent details a methodology for continuous panning of oblique images that includes determining a primary oblique image, determining at least one adjacent secondary oblique image, and displaying the primary oblique image and the secondary oblique image(s) on the same display. NEARMAP-1001, Abstract, 3:55-5:54, 9:34-12:8, 12:18-14:64. The secondary oblique image(s) may be positioned on the display "such that the features in the adjacent primary oblique image 102 and secondary oblique images 104a-d are aligned on the display." NEARMAP-1001, 4:11-16, 4:64-67, 5:15-19, 5:31-34, 5:50-54, 9:10-14, 12:5-8. The primary oblique image and the secondary oblique image(s) are displayed using the perspectives from which the respective images were captured. NEARMAP-1001, 3:29-32, 12:36-43, Figs. 3a-3b; EX2001, [27]-[29]. That is, on the same display the primary oblique image matches the perspective from which the primary oblique image was captured, while each secondary oblique image matches the perspective from which the secondary oblique image was captured. *Id*.

Figs. 3a and 3b of the '518 Patent, reproduced and annotated below, each provide a pictorial representation of a primary oblique image 102 and a secondary oblique image 104 with an edge indicator (identifying the edge of the primary oblique image 102) and a reference indicator 209 (identifying the location common to the two images). NEARMAP-1001, 5:64-6:2, 11:49-61; EX2001, [28]-[29].

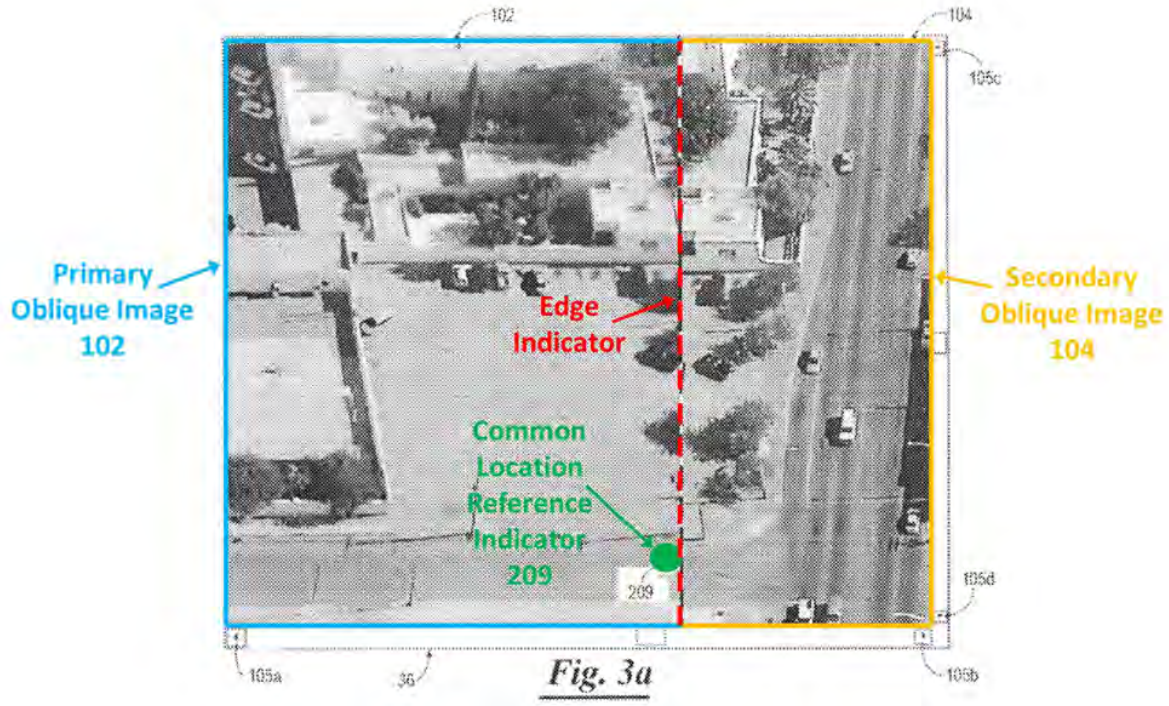


Fig. 3a

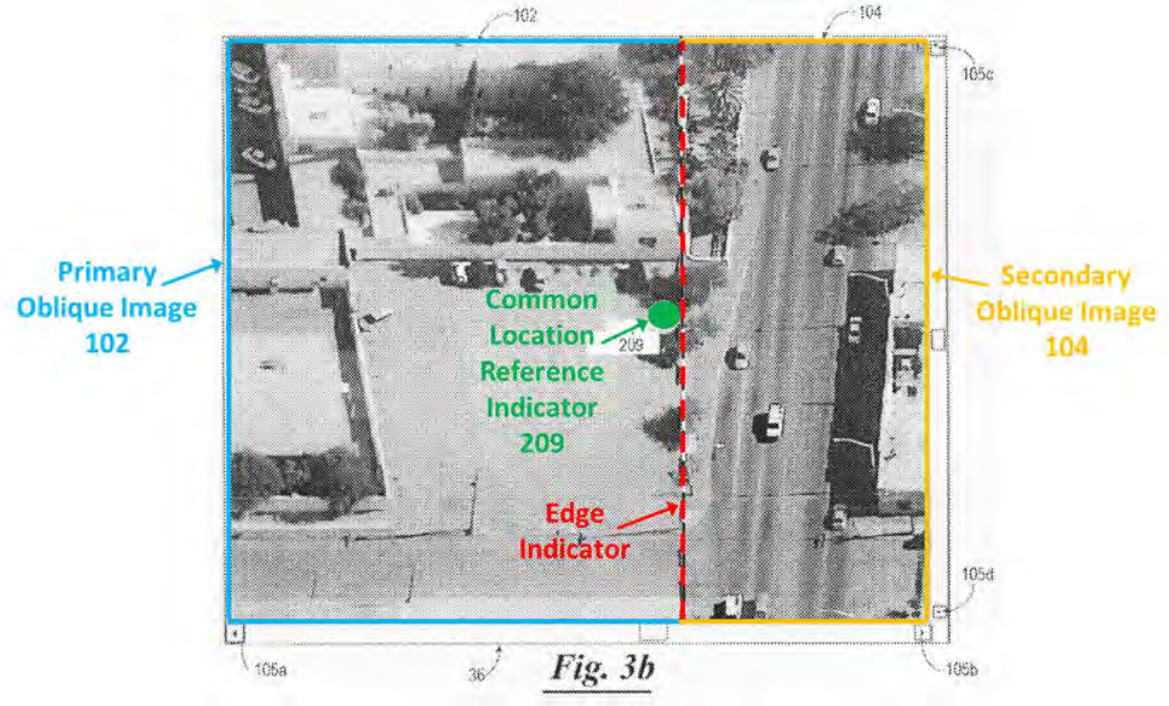


Fig. 3b

NEARMAP-1001, Figs. 3a and 3b (annotated); EX2001, [28]-[29].

Figs. 3a and 3b show the same images (i.e., the same primary oblique image 102 and the same secondary oblique image 104), but with the alignment and the display of the two images changed between Fig. 3a and Fig. 3b in accordance with the different positions of the reference indicator 209 (i.e., near the bottom-right of the primary oblique image 102 in Fig. 3a and near the middle-right of the primary oblique image in Fig. 3b). NEARMAP-1001, 5:64-6:2, 11:49-61; EX2001, [29]. As shown, in both Figs. 3a and 3b the primary oblique image 102 and the secondary oblique image 104 match the perspectives from which the images were captured. NEARMAP-1001, 3:29-32, 12:36-43, Figs. 3a-3b; EX2001, [29]. Further, as also shown in both Figs. 3a and 3b, the secondary oblique image 104 is positioned on the display such that the feature(s) in the primary oblique image 102 and the secondary oblique image 104 at the common location or common area of interest—as indicated by the reference indicator 209—are aligned on the display. NEARMAP-1001, 4:11-16, 4:64-67, 5:15-19, 5:31-34, 5:50-54, 9:10-14, 12:5-8; EX2001, [29]. The different positions of the reference indicator 209 (i.e., the common location) between Figs. 3a and 3b cause different amounts/portions of the secondary oblique image 104 to be visible as a result of the alignment of the images to the different positions of the reference indicator 209. *Id*. However, the perspective of the secondary oblique image 104 remains the same between Figs. 3a and 3b—matching the perspective from which the secondary oblique image 104

was captured. NEARMAP-1001, 3:29-32, 12:36-43, Figs. 3a-3b; EX2001, [29]. Likewise, the perspective of the primary oblique image 102 remains the same between Figs. 3a and 3b—matching the perspective from which the primary oblique image 102 was captured. *Id*.

The methodology of the '518 Patent also includes detecting one or more transition events, which can include "(1) detecting the edge of the primary oblique image, (2) detecting the approach of an edge of the primary oblique image, or (3) detecting a pre-selected distance or number of pixels from the edge of the primary oblique image." NEARMAP-1001, 4:6-7, 4:22-28, *see also*, 6:38-47, 9:53-55, 10:15-29, 11:19-48. In this regard, the '518 Patent explains that a transition event can include "the act of Panning; or a user action such as a mouse click." NEARMAP-1001, 6:45-47.

Upon detection of a transition event, an image transition can occur that includes "visually changing the primary oblique image into a secondary oblique image and a secondary oblique image into a primary oblique image on a display." NEARMAP-1001, 6:38-41. For example, referring to Figs. 3a and 3b, if a user panning within the primary oblique image 102 reaches the edge of the primary oblique image (or approaches the edge or reaches a pre-selected distance or number of pixels from the edge), then the primary oblique image 102 would change into a secondary oblique image and the secondary oblique image 104

would become the primary oblique image. NEARMAP-1001, 6:38-41; EX2001, [31].

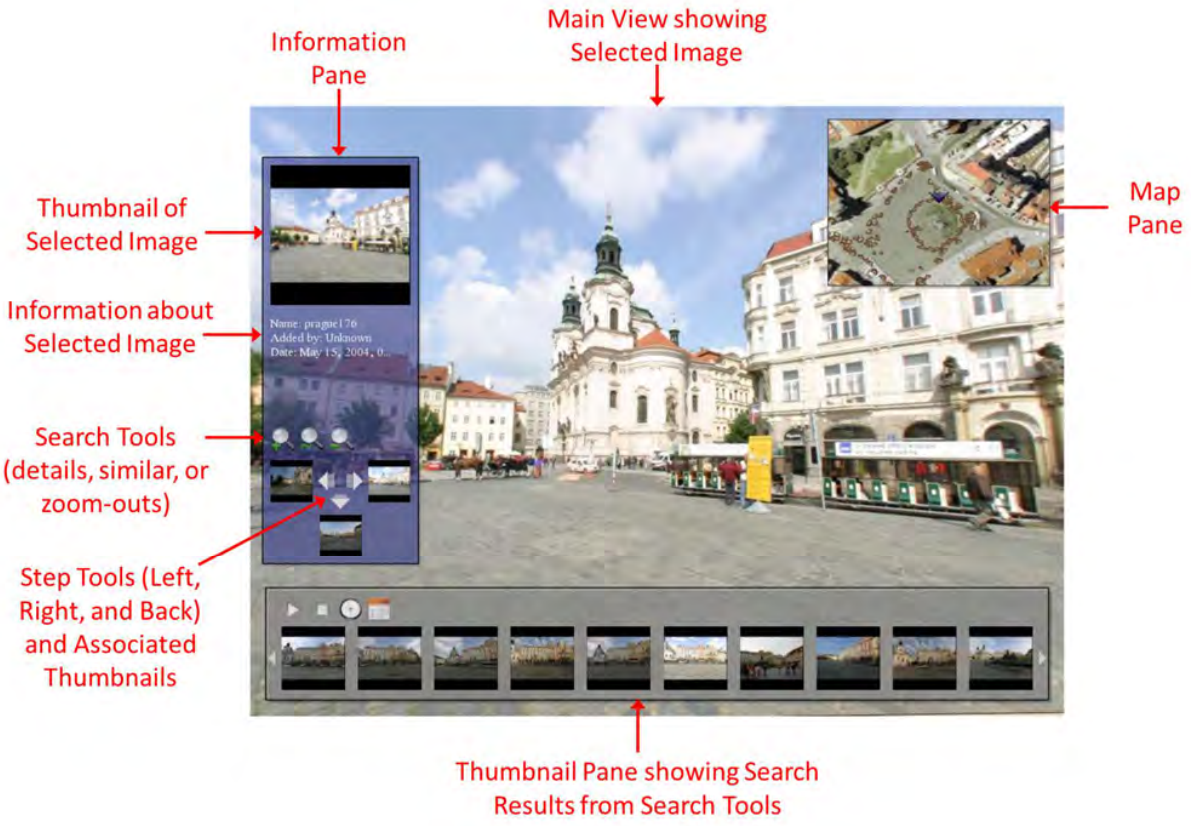
III. PETITIONER'S GROUNDS 1A AND 1B FAIL BECAUSE PETITIONER DOES NOT SHOW THE PRIOR ART RENDERS THE CLAIMS OBVIOUS

Under Ground 1A, Petitioner alleges that claims 1 and 3-16 are unpatentable over the combination of Snavely (NEARMAP-1004), Balfour (NEARMAP-1005), and Irani (NEARMAP-1007). Petition, p. 6. Under Ground 1B, Petitioner alleges that claim 2 is unpatentable over the combination of Snavely, Balfour, Irani, and Yelton (NEARMAP-1006). However, based on an accurate and complete understanding of the teachings of Snavely, Balfour, Irani, and Yelton, the references alone and in combination fail to render any of the claims of the '518 Patent obvious.

A. Overview of Snavely

Snavely presents "a system for interactively browsing and exploring large unstructured collections of photographs," including "photographs taken by different cameras in widely different conditions." NEARMAP-1004, p. 1. Snavely explains that "Our work is based on the idea of using camera pose (location, orientation, and field of view) and sparse 3D scene information to create new interfaces for browsing large collections of photographs. Knowing the camera pose … allows the user to virtually explore the scene by moving in 3D space from one image to another." NEARMAP-1004, p. 2. Snavely describes that "when the user

visits a photo, that photo appears at full-resolution, and information about [that photo] appears in a pane on the left." NEARMAP-1004, p. 6 (Fig. 5, Right caption). The right side of Fig. 5 of Snavely is reproduced and annotated below.



NEARMAP-1004, Fig. 5 (annotated); EX2001, [40]-[43].

As shown above, Snavely explains that the "information pane [on the left] appears when the user visits a photograph" and "displays information about that photo, including its name, the name of the photographer, and the date and time when it was taken." NEARMAP-1004, p. 5. In addition, the information pane "contains controls for searching for other photographs with certain geometric

relations to the current photo." NEARMAP-1004, p. 5. More specifically, the information pane includes a first row of search tools that includes three tools: "(1) find details, or higher-resolution close-ups, of the current photo, (2) find similar photos, and (3) find zoom-outs, or photos that show more surrounding context." NEARMAP-1004, p. 7. A thumbnail pane at the bottom of Snavely's photo explorer shows the results of any of these searches. NEARMAP-1004, p. 7. The information pane also includes a second row of tools that "give the user a simple way to 'step'" left, right, or back (zoom-out) through the use of arrows and showing thumbnails of the associated left, right, or back images. NEARMAP-1004, p. 7.

It is clear from both the layout of Snavely's photo explorer and Snavely's explicit statements (e.g., that the photo explorer is intended to allow the user to explore a scene by moving "**from one image to another**") that Snavely is consistent with what the '518 Patent refers to as "the common practice in the industry" of providing "a series of individual images within which the user can pan" and "[t]o see beyond the limits of an image the user needs to cause another image to be loaded." NEARMAP-1004, p. 2; NEARMAP-1001, 3:26-57; EX2001, [43]. This understanding is confirmed by Snavely's statement that "The user can pan and zoom to explore **the photo**, but might also want to see aspects of the scene **beyond those captured in a single picture**" and, therefore, "might wonder, for

instance, what lies just outside the field of view, or to the left of the objects in the photo, or what the scene looks like at a different time of day." NEARMAP-1004, p. 7; EX2001, [43]. While Snavely provides the search and step tools noted above to "make it easier to find related views" (i.e., find other individual images to view), Snavely entirely fails to disclose or suggest displaying a primary oblique image and a secondary oblique image in the manner described and claimed by the '518 Patent. EX2001, [43].

B. Overview of Balfour

Balfour relates to a system that provides "the ability to automatically select the current oblique image of interest from a large image warehouse, based on the user's viewpoint within a virtual 3D/4D scene, and display that image geo-registered in the virtual 3D/4D scene." NEARMAP-1005, 1:8-12, 1:65-2:3. Balfour explains that the system includes "a selection process component, which automatically selects and retrieves the best fit oblique image from an image warehouse for the users' current viewpoint; and a display process component, which presents the oblique image to the user geo-registered within the context of the 3D virtual scene." NEARMAP-1005, 2:34-40. Balfour describes that "The best fit determination (23) is a heuristic with user configurable scoring methods and weights." NEARMAP-1005, 6:53-54. In this regard, Balfour explains that "[i]f the highest scoring image is still the currently displayed oblique image, the

current oblique image (24) remains unchanged" and that "[i]f the best fit determination (23) identifies a new image, then, preferably the current oblique image (23) is set to this new oblique image." NEARMAP-1005, 7:8-10. In this manner, Balfour's system selects a single, best fit oblique image from an image warehouse and displays the selected individual image to a user. EX2001, [44]. Balfour entirely fails to disclose or suggest displaying a primary oblique image and a secondary oblique image in the manner described and claimed by the '518 Patent. EX2001, [44].

Balfour also notes that "Oblique images do not lend themselves to being stitched together into a mosaic like ortho images do. To complicate things, the same location may be imaged at many different angles, not just one like an ortho image." NEARMAP-1005, 1:28-31.

C. Overview of Irani

Irani is titled "Video Indexing Based on Mosaic Representations" and describes a technique that transforms "video data from a sequential frame-based representation … into a single common scene-based representation." NEARMAP-1007, p. 905. Irani explains that "the scene-based representation is divided into three parts" consisting of "1) Panoramic Mosaic Image," "2) Geometric Transformations," and "3) Dynamic Information." NEARMAP-1007, p. 907. Irani notes that the panoramic mosaic image "captures an extended spatial view of the

entire scene visible in the video clip" and "captures the appearance of the *static* portions of the scene." NEARMAP-1007, p. 907 (emphasis original). In this regard, Irani explains that "The mosaic image is constructed by first aligning all the frames with respect to the common coordinate system (which becomes also the mosaic coordinate system) and then integrating all these frames to form a single image." NEARMAP-1007, p. 907. Irani describes that "Different methods of integration can be employed (e.g., temporal average, temporal median, superresolution, etc.)." NEARMAP-1007, p. 907. Irani notes that "The mosaic representation removes the redundancy contained in the overlap between successive frames and represents each spatial point only once." NEARMAP-1007, p. 907. As described by Irani, the resulting mosaic image is formed by first changing the perspectives of the various frames to align to a common coordinate system and then integrating the modified-perspective frames into a single image that represents each spatial point only once. EX2001, [45].

D. Petitioner Fails to Demonstrate Claim Elements of each of Independent Claims 1, 13, 14, 15, and 16

As established later, a POSITA would not combine the teachings of Irani with Snavely and Balfour as proposed by Petitioner. However, even assuming *arguendo* that the teachings of Snavely, Balfour, and Irani were somehow combined as proposed by Petitioner, the resulting combination still fails to demonstrate all of the claim elements of each of independent claims 1, 13, 14, 15,

and 16. EX2001, [47]-[57]. For example, even adopting Petitioner's proposed combination for arguments sake (1) Petitioner entirely fails to show how *Petitioner's proposed combination* satisfies *Petitioner's own definition* of the claim language for independent claims 1, 13, 14, 15, and 16 and (2) Petitioner's proposed combination of Snavely, Balfour, and Irani necessarily cannot meet Petitioner's own definition of the claim language for independent claims 1, 13, 14, 15, and 16. *Id*. Because Petitioner fails to demonstrate all of the claim elements of independent claims 1, 13, 14, 15, and 16, Petitioner necessarily fails to demonstrate all of the claim elements of dependent claims 2-12 that depend from and further limit independent claim 1.

1. Petitioner Entirely Fails to Show How Petitioner's Proposed Combination Satisfies Elements of Independent Claims 1, 13, 14, 15, and 16, Including Petitioner's Own Claim Definition

Petitioner's proposed combination of Snavely, Balfour, and Irani does not disclose or suggest "*displaying the primary oblique image and the at least one adjacent secondary oblique image on a same display … wherein the primary and secondary oblique images match the perspectives from which the primary and secondary oblique images were captured*," as similarly recited by each of independent claims 1, 13, 14, 15, and 16.[2] EX2001, [48]-[54]. Further, Petitioner

[2] The claim language varies slightly between the different independent claims (*see*

entirely fails to show how Petitioner's proposed combination satisfies Petitioner's own proposed definition of the claim language. *See*, e.g., Petition, p. 33-35; EX2001, [48], [55]-[57].

In addressing the limitation reciting "*wherein the primary and secondary oblique images match the perspectives from which the primary and secondary oblique images were captured*," Petitioner cites to aspects of Balfour related to "movement to a new viewpoint." Petition, pp. 33-34 citing to NEARMAP-1005, 5:30-41. However, the cited section of Balfour (reproduced below in full) is entirely unrelated to simultaneously displaying a primary oblique image and at least one adjacent secondary oblique image, let alone matching the perspectives from which the images were captured. EX2001, [49].

> The movement to a new viewpoint (17) is also influenced by two other factors. One factor is a geo-referenced oblique image area (11), which preferably also contains information on the oblique angle of the current oblique image from the image warehouse, which is referenced to maintain the angle of the viewpoint (17) vector relative to the plane of the geo-referenced image area (11) within a user-configurable deviation from the actual oblique image angle. This is preferably done

---

claim elements [1f], [13f], [14g], [15f], and [16f] as identified by Petitioner), but the deficiencies in Petitioner's proposed combination are equally applicable to all of the variations. EX2001, [48].

> to minimize any image distortion to a user-selected preference. The preferred embodiment keeps this angle deviation at less than 5 degrees, although the user can override this as desired. NEARMAP-1005, 5:30-41.

As Dr. Bajaj explains, "[a] POSITA would simply not understand this portion of Balfour as teaching anything remotely related to simultaneously displaying primary and secondary oblique images that match the perspectives from which the primary and secondary oblique images were captured. Instead, a POSITA would understand this portion of Balfour for what it actually says, which is that moving to a new viewpoint in the system of Balfour is influenced by multiple factors, including a geo-referenced oblique image area that is utilized to maintain the viewpoint within a user-configurable deviation from the actual oblique image angle to minimize image distortion." EX2001, [50], citing to NEARMAP-1005, 5:30-41, *see also*, Fig. 2.

Recognizing that this portion of Balfour entirely fails to show that "*the primary and secondary oblique images match the perspectives from which the primary and secondary oblique images were captured*," Petitioner asserted that "In the alternative, Irani also teaches the use of 'pure translations' on a plurality of images including a primary oblique image and a secondary oblique image into a mosaic." Petition, p. 34. However, again the cited portion of Irani (reproduced

below in full) entirely fails to disclose simultaneously displaying a primary oblique image and at least one adjacent secondary oblique image with the displayed images matching the perspectives from which the images were captured. EX2001, [51]-[52].

> A robust version of the above method [14] handles scenes with multiple moving objects. It incorporates a gradual refinement of the complexity of the motion model (ranging from pure translation at low resolution levels to a 2-D affine the highest resolution level). Outlier rejection is performed before each refinement step within the multiscale analysis. This robust analysis further enhances the locking property of the above-mentioned algorithm onto a single dominant motion. NEARMAP-1007, p. 918, 2:55 – p. 919, 1:5.

Again, Dr. Bajaj explains "A POSITA would simply not understand the reference to 'pure translations' in this portion of Irani as teaching anything remotely related to simultaneously displaying primary and secondary oblique images that match the perspectives from which the primary and secondary oblique images were captured. Instead, a POSITA would understand that this portion of Irani is simply describing how 2-D parametric camera-induced motion can be computed using a version of a method described in an earlier paper ([14], M. Irani, B. Rousso, and S. Peleg, "*Computing occluding and transparent motions*," Int. J.

Comput. Vision, vol. 12, pp. 5–16, Feb. 1994.) that utilizes pure translation at low resolution." EX2001, [52] citing to NEARMAP-1007, pp. 918-920.

Further, while Petitioner states in the Petition "that all claim terms should be construed according to the *Phillips* standard" and that "no formal claim constructions are necessary" (Petition, p. 5.), this position directly contradicts the explicit testimony of Petitioner's Expert, Dr. Forsyth. NEARMAP-1003, [15]; EX2001, [35]. In this regard, Dr. Forsyth testifies that when the '518 Patent uses the phrase "the oblique images 'match the perspectives' from which they 'were captured'" in independent claim 1 that this "'**means** that image pixels are not aligned on a rectangular grid [on the ground] but are aligned to the perspective that matches the perspective the camera has captured.'" NEARMAP-1003, ¶[15].

In fact, the Petitioner's position that "no formal claim constructions are necessary" also contradicts the Petitioner's own statements in the Petition. *See* Petition, p. 4; EX2001, [36]. In this regard, the Petitioner sets forth exactly the same position and associated definition as Dr. Forsyth. Petition, p. 4. More specifically, citing to column 12, lines 41-43 of the '518 Patent—where the language of claim 1 reciting "*wherein the primary and secondary oblique images match the perspectives from which the primary and secondary oblique images were captured*" is found—Petitioner asserts that "[m]atching the perspectives '**means** that image pixels are not aligned on a rectangular grid [on the ground] but

are aligned to the perspective that matches the perspective the camera has captured.'" Petition, p. 4. Accordingly, Dr. Forsyth's and Petitioner's own proposed definition of the claim language "*wherein the primary and secondary oblique images match the perspectives from which the primary and secondary oblique images were captured*" is "wherein the image pixels of the primary and secondary images are not aligned on a rectangular grid [on the ground] but are aligned to perspectives that match the perspectives from which the camera captured the primary and second oblique images." EX2001, [37].

Despite both Dr. Forsyth and Petitioner setting forth this explicit definition of the claim language, the Petition entirely fails to establish how the proposed combination of Snavely, Balfour, and Irani meets this understanding of the claims. *See*, e.g., Petition, pp. 33-35; EX2001, [53]. For example, the Petition makes no attempt to show that "the image pixels of the primary and secondary images are not aligned on a rectangular grid [on the ground]" as required by Dr. Forsyth and Petitioner's own definition. *Id*.

Since the portions of Balfour and Irani cited by Petitioner entirely fail to disclose or suggest "*displaying the primary oblique image and the at least one adjacent secondary oblique image on a same display … wherein the primary and secondary oblique images match the perspectives from which the primary and secondary oblique images were captured*," and the Petition does not even attempt

to address how the proposed combination teaches Dr. Forsyth and Petitioner's own definition of this claim language, the Petitioner has failed to establish that the proposed combination meets all of the recited elements of independent claims 1, 13, 14, 15, and 16. EX2001, [54]. Therefore, for at least this reason, independent claims 1, 13, 14, 15, and 16 are patentable over the Petitioner's proposed combination of Snavely, Balfour, and Irani. *Id*.

2. Petitioner's Proposed Combination of Snavely, Balfour, and Irani Necessarily Cannot Meet Petitioner's Own Claim Definition

The Petition asserts that "[a] POSITA would have been motivated and would have found it obvious and straightforward to modify the system of the Snavely-Balfour combination to [incorporate] Irani's teaching of aligning images in the same display [because] "aligning all the frames with respect to the common coordinate system ... removes the redundancy contained in the overlap ... represents each spatial point only once." Petition, 17; EX2001, [55]. As Dr. Bajaj explains, "Petitioner's combination requires 'aligning all the frames with respect to the common coordinate system,' and a POSITA would have understood that, to create the 2-D panoramic mosaics taught by Irani, the frames are aligned to a rectangular grid." EX2001, [55].

However, because Petitioner's proposed combination requires aligning the images "with respect to the common coordinate system" (e.g., using a 2-D

rectangular grid, as taught by Irani), the resulting combination necessarily cannot also meet Petitioner's and Dr. Forsyth's definition requiring that "the primary and secondary images are **not aligned on a rectangular grid**", but instead remain "aligned to perspectives that **match the perspectives from which the camera captured the primary and second oblique images**." EX2001, [56]. Simply put, the Petitioner's proposed combination contradicts the very definition of "match the perspectives" set forth by Petitioner and Dr. Forsyth. *Id*.

Accordingly, for this fundamental reason, even if one was to attempt to combine Snavely, Balfour, and Irani in the manner proposed by Petitioner, the resulting combination would still fail to disclose or suggest all of the recited elements of independent claims 1, 13, 14, 15, and 16. EX2001, [57]. Therefore, independent claims 1, 13, 14, 15, and 16 are patentable over the Petitioner's proposed combination of Snavely, Balfour, and Irani. *Id*.

E. Petitioner's Proposed Reasons for Combining Irani with Snavely and Balfour are Fatally Flawed

As noted above, Petitioner's proposed combination requires "aligning all the frames with respect to the common coordinate system," and a POSITA would have understood that, to create the 2-D panoramic mosaics taught by Irani, the frames are aligned to a rectangular grid. EX2001, [55], [58]. The Petition further asserts that "A POSITA would have been motivated to modify the combination of Snavely-Balfour to incorporate Irani's teachings in order to **'align each frame of'**

a mosaic" to remove redundancy and that "A POSITA would have readily understood that such alignment would include an alignment of images in order to match the perspectives of adjacent images." Petition, p. 18.

However, as discussed below, these alleged reasons for combining Irani with Snavely and Balfour are fatally flawed for multiple reasons. EX2001, [60]-[71]. Moreover, because Petitioner has not shown sufficient reasons to combine the references in the manner proposed, Petitioner has necessarily failed to establish that claims 1 and 3-16 of the '518 Patent are obvious over Snavely, Balfour, and Irani. *Id*. Further, because Petitioner's proposed combination of Snavely, Balfour, Irani, and Yelton relies on the same fatally flawed foundation, Petitioner has necessarily failed to establish that claim 2 of the '518 Patent is obvious over Snavely, Balfour, Irani, and Yelton. *Id*. at [61].

1. Irani Teaches Away from Petitioner's Proposed Combination Because Irani's Techniques Are Not Suitable for Use with the Collections of Unstructured Oblique Images of Snavely and Balfour

Irani teaches away from Petitioner's proposed combination. EX2001, [62]-[64]. In this regard, Irani's techniques for constructing mosaics/panoramic views are not suitable in the context of the collections of unstructured oblique images of the combination of Snavely and Balfour. *Id*. at [62]. In fact, Irani itself confirms this is the case. *Id*. For example, Irani explains that "**there are situations for which our current methods for constructing panoramic views may not**

suffice," including "when a camera is moving around an object (or, equivalently, if an object is rotating in front of the camera) or when the scene contains significant 3-D clutter, with many objects at many different depths. ***These situations require further study and treatment***." NEARMAP-1007, p. 920.

Notably, Dr. Bajaj testifies that "these examples from Irani of when Irani's methods for constructing a mosaic/panoramic image will not work are exactly the types of situations that will be present in the context of Petitioner's proposed combination of Snavely and Balfour for browsing and exploring large unstructured collections of oblique photographs." EX2001, [63]. In this regard, Snavely confirms that "our typical image set has photos from hundreds of different cameras, zoom levels, resolutions, different times of day or seasons, illumination, weather, and differing amounts of occlusion." NEARMAP-1004, p. 2; EX2001, [63]. As Dr. Bajaj explains, "in Petitioner's proposed combination of Snavely and Balfour there will be oblique pictures with significant 3-D clutter as the result of the picture having many objects at many different depths (e.g., a crowded scene around a statue, monument, or building) such that—as Irani admits—Irani's methods for constructing a panoramic mosaic will not work." EX2001, [63]. Dr. Bajaj further explains that there will also "be pictures from around the various sides of the same object (e.g., various/sides perspectives of a statue, monument, or building), which is considered equivalent to 'when a camera is moving around an

object' and, therefore, again—as Irani admits—Irani's methods for constructing the panoramic mosaic will not be suitable." *Id*.

The Petition entirely fails to address the fact that Irani teaches that its techniques would not be suitable for use in the context of the combination of Snavely and Balfour. *See*, Petition, 16-20; EX2001, [64]. As a result, the Petition necessarily fails to address how the problems associated with these situations—which Irani notes "require further study and treatment"—would have been solved, let alone if and how any such theoretical solutions could then be implemented into the combination of Snavely and Balfour in an obvious manner. EX2001, [64]. Accordingly, for at least this reason, a POSITA would not combine the teachings of Irani with Snavely and Balfour as proposed by Petitioner. *Id*.

2. Petitioner's Proposed Combination Would Destroy the Intended Function of Snavely

The proposed combination of Irani with Snavely and Balfour would destroy the intended function of Snavely. EX2001, [65]-[66]. Snavely explains that its "system for interactively browsing and exploring large unstructured collections of photographs of a scene" provides the ability to "more effectively compare scene appearance over different times of day, seasons, or weather conditions." NEARMAP-1004, pp. 1-2. In this regard, Snavely notes that when a user visits or views a particular photograph, "the user has a snapshot of the world from a single point of view and an instant in time" but may "wonder, for instance, what lies just

outside the field of view, or to the left of the objects in the photo, or what the scene looks like at a different time of day." NEARMAP-1004, p. 7. Accordingly, Snavely provides tools for finding other photographs showing the same scene and associated spatial points, including tools for finding (1) "details, or higher-resolution close-ups, of the current photo," (2) "similar photos," and (3) "zoom-outs, or photos that show more surrounding context." NEARMAP-1004, p. 7.

In contrast, the Petitioner's proposed combination would "**align[] all the frames with respect to the common coordinate system … remove[] the redundancy contained in the overlap … represent[] each spatial point only once**." Petition, p. 17. As Dr. Bajaj explains "[c]reating a mosaic by removing the redundancy across images and representing each spatial point only once would entirely destroy the ability of a user to 'compare scene appearance over different times of day, seasons, or weather conditions.'" EX2001, [66]. Dr. Bajaj further explains that under the Petitioner's proposed combination "a user would not be able to find other photographs showing the same scene, higher resolution close-ups, zoom-outs or photos that show more surrounding context and associated spatial points because all of the photos would be combined into a single mosaic photo such that each spatial point would be represented 'only once.'" *Id*. In addition to destroying these intended functions of Snavely's system, Petitioner's proposed combination would also make the associated tools of Snavely for finding

other photographs showing the same spatial points (e.g., close-ups, zoom-outs, and/or similar photos) pointless. *Id*. For these reasons, Dr. Bajaj concludes that "a POSITA would not combine the teachings of Irani with Snavely and Balfour as proposed by Petitioner because such a combination would destroy many of the useful functions and tools of Snavely's system." *Id*.

3. Balfour Explicitly Teaches Away from Petitioner's Proposed Combination

Balfour explicitly teaches away from Petitioner's proposed combination of Irani with Snavely and Balfour. EX2001, [67]-[70]. In this regard, Balfour explains that "[i]n the prior art, image mosaics are generally accomplished using ortho-images (i.e., image surfaces taken at a 90 degree angle to the camera lens)" and that "**[o]blique images do not lend themselves to being stitched together into a mosaic like ortho images do**. To complicate things, the same location may be imaged at many different angles, not just one like an ortho image." NEARMAP-1005, 1:28-31, 44-47. Dr. Bajaj explains that "[a] POSITA would understand from this explicit statement from Balfour that oblique images are not suitable for being stitched together into a mosaic, like ortho-images." EX2001, [67]. Accordingly, because Balfour explicitly teaches away from attempting to form a mosaic from oblique images, Dr. Bajaj concludes that "a POSITA would not attempt to align oblique images to a common coordinate system and remove redundancy in the overlap to create a mosaic image as required by Petitioner's proposed

combination." *Id*.

This understanding from Balfour—that oblique images are not suitable for being aligned to a common grid and stitched together into a mosaic—is also consistent with the teachings of Irani discussed above (e.g., noting that "there are situations for which our current methods for constructing panoramic views may not suffice," including "when a camera is moving around an object (or, equivalently, if an object is rotating in front of the camera) or when the scene contains significant 3-D clutter, with many objects at many different depths. These situations require further study and treatment." NEARMAP-1007, p. 920.). EX2001, [68].

Balfour's teaching that oblique images are not suitable for being aligned to a common grid and stitched together into a mosaic is also consistent with the '518 Patent. EX2001, [69]. Similar to Balfour, the Background of the '518 Patent describes how—contrary to ortho-images used to create an ortho-mosaic image—oblique images "are not grid aligned and can be captured from any direction" and, therefore, that "a feature on one image will not look the same on another image." NEARMAP-1001, 3:26-28; EX2001, [69]. As a result, the '518 explains that "Because of these issues, the common practice in the industry is to provide oblique imagery as a series of individual images within which the user can pan," and not attempt to combine oblique images into a mosaic. NEARMAP-1001, 3:51-53; EX2001, [69].

The Petition entirely fails to address the afore-mentioned facts and that moreover Balfour teaches away from the proposed combination. *See*, Petition, 11-20 ; EX2001, [70]. Accordingly, for at least this additional reason, a POSITA would not combine the teachings of Irani with Snavely and Balfour as proposed by Petitioner. EX2001, [70].

4. Irani's Teaching of Aligning Each Frame of a Mosaic to a Common Coordinate System is Irrelevant to the Display of the Individual Oblique Images of the Combination of Snavely and Balfour

Irani's teaching of aligning each frame of a mosaic is irrelevant to the display of the individual oblique images of Snavely and Balfour. EX2001, [71]. As discussed above, Snavely's photo explorer provides a series of individual images within which the user can pan and, to see beyond the limits of a current image, the user causes another image to be loaded. *See*, NEARMAP-1004, pp. 2, 7; EX2001, [71]. Similarly, as discussed above, Balfour's system selects a single, best fit oblique image from an image warehouse and displays the selected individual image to a user. *See*, NEARMAP-1005, 1:8-12, 1:65-2:3, 2:34-40; 7:8-10.; EX2001, [71]. Notably, neither Snavely nor Balfour combine multiple oblique images into a mosaic. EX2001, [71]. Because neither Snavely nor Balfour combine multiple oblique images into a mosaic, a POSITA would have no reason to look to Irani's teaching of aligning each of frame of a mosaic in order to reduce redundancy in the context of the combination of Snavely and Balfour. *Id*. Irani's

teaching on this point is irrelevant to the individual images displayed by both Snavely and Balfour. *Id*. Accordingly, for at least this additional reason, a POSITA would not combine the teachings of Irani with Snavely and Balfour as proposed by Petitioner.

IV. PETITIONER HAS FAILED TO ESTABLISH THAT ITS PRIMARY REFERENCE, SNAVELY, IS PUBLICLY AVAILABLE PRIOR ART TO THE '518 PATENT

"[A]t the institution stage, the petition must identify, with particularity, evidence sufficient to establish a reasonable likelihood that the reference was publicly accessible before the critical date of the challenged patent and therefore that there is a reasonable likelihood that it qualifies as a printed publication." *Hulu, LLC v. Sound View Innovations*, IPR2018-01039, Paper 29, p. 13. Here, Petitioner has failed to establish a reasonable likelihood that Snavely—the primary reference in every ground raised in the Petition—is prior art to the '518 Patent.

The Petition does not provide any analysis whatsoever regarding whether Snavely is available as prior art. Instead, the Petition simply asserts Snavely has a July 2006 publication date along with a comment that "[a]uthentication and public availability evidence for selected prior art references is included in the Declaration of Jacob Munford. See NEARMAP-1015." Petition, p. 2. Petitioner relies solely on the Munford Declaration (NEARMAP-1015) to allegedly provide authentication and public availability evidence for Snavely. However, as shown

below, the Munford Declaration is entirely insufficient to establish a reasonable likelihood that Snavely was publicly accessible at any point in time, let alone prior to the critical date of the '518 Patent.

A. Petitioner provides no evidence tying Snavely to the July 2006 edition of *ACM Transactions on Graphics*.

As an initial matter, Snavely (NEARMAP-1004) itself does not include any information regarding its publication or a publication date. Instead, Snavely includes a title ("Photo Tourism: Exploring Photo Collections in 3D") and identifies the three authors (Noah Snavely, University of Washington; Steven M. Seitz, University of Washington; and Richard Szeliski, Microsoft Research). Otherwise, Snavely only includes the substantive text and images of the paper. Snavely does not even include page numbers. The included pages numbers of Snavely appear to be the bates numbering added by Petitioner for exhibit purposes. Accordingly, there is simply no identifiable information from Snavely regarding if, when, where, or how it may have ever been published. *See Topcon Medical Systems, Inc. v. Carl Zeiss Meditec, Inc.*, IPR2021-00452, Paper 14 at 11, 16-17 (PTAB July 21, 2021) (denying institution where the version of a research article submitted by a petitioner lacked any publication date, and where the petitioner did not establish that the version submitted with the petition matched an earlier published version).

Munford testifies that "I have reviewed Exhibit 1004, "Photo Tourism:

Exploring Photo Collections in 3D" by Noah Snavely, Steven M. Seitz and Richard Szeliski as published in **ACM Transactions on Graphics**, July 2006." NEARMAP-1015, [7]. There are two critical issues with this statement that are fatal to any attempt to authenticate or prove the public availability of Snavely prior to the critical date of the '518 Patent.

First, Munford's statement conflicts with the identification of Snavely in the Petition. The Exhibit List included with the Petition indicates that NEARMAP-1004 is "Noah Snavely et al., *Photo Tourism: Exploring Photo Collections in 3D*, **ACM Siggraph 2006 Papers** (July 2006) ("Snavely")." Petition, p. iii. Accordingly, the Petition and Munford identify what is alleged to be the same exhibit as being from two different sources: ACM Transactions on Graphics (Munford Declaration) and ACM Siggraph 2006 Papers (Petition). There is no acknowledgement or explanation of this conflict regarding the potential source of Snavely in either the Petition or the Munford Declaration. Accordingly, it is entirely unclear whether Munford attempted to authenticate a different paper than what is provided as NEARMAP-1004, whether the Petitioner relies upon the same or a different paper than the one considered by Munford for Petitioner's proposed combinations set forth in the Petition, or whether any of a number of other theoretical possibilities may be at play.

Second, the Munford Declaration improperly assumes the basis for its

conclusion. The entire premise of the Munford Declaration is that the Penn State University library had the *ACM Transactions on Graphics* periodical series and, thus, that it should theoretically have had the July 2006 edition of that series. But even if Petitioner could prove that the Penn State library had the July 2006 edition (which it has not), that would be meaningless without a separate finding that the July 2006 edition includes what petitioner submitted as NEARMAP-1004. But, again, Petitioner presents no evidence tying what it submitted as NEARMAP-1004 to the *ACM Transactions on Graphics*, much less to the July 2006 edition of that series. This critical error is sufficient to deny institution. *See Topcon Medical Systems*, IPR2021-00452, Paper 14 at 11 (PTAB July 21, 2021) (denying institution where the version of a research article submitted by a petitioner did not match the version available before the priority date).

Specifically, Munford's statement indicates that he reviewed Exhibit 1004 "as published in *ACM Transactions on Graphics*, July 2006." NEARMAP-1015, [7]. However, as discussed above, Snavely itself is void of any information regarding publication. Accordingly, it is impossible for Munford to know based on reviewing only NEARMAP-1004 whether any paper that may have been published in *ACM Transactions on Graphics*, July 2006 is the same as NEARMAP-1004. Munford testifies that he obtained "the MARC record for *ACM Transactions on Graphics* as held by the Penn State University library." NEARMAP-1015, [8].

However, there is nothing in the MARC record to indicate that the July 2006 edition of *ACM Transactions on Graphics* included any version of Snavely, let alone the particular version of Snavely provided by Petitioner as NEARMAP-1004.

For example, the MARC record does not include a table of contents or any other indication of what the July 2006 edition of *ACM Transactions on Graphics* may or may not include. Notably, contrary to the approach taken with respect to Irani (NEARMAP-1007), Munford did not obtain a copy of the July 2006 edition of *ACM Transactions on Graphics* (or any other publicly available publication) to compare to NEARMAP-1004. Instead, Munford improperly relies only on a MARC record that provides no indication whatsoever that Snavely is included as part of the July 2006 edition of *ACM Transactions on Graphics*. Further, as discussed above, there is nothing in Snavely (e.g., date, ISSN number, Publisher, Publication, etc.) that can be matched to the MARC record. Accordingly, based on the evidence in the Munford Declaration, any assertion that NEARMAP-1004 is the same as what was published in the July 2006 edition of *ACM Transactions on Graphics* or any other publication is pure conjecture.

For the reasons above, the Munford Declaration entirely fails to establish that Snavely (NEARMAP-1004) was included as part of the July 2006 edition of *ACM Transactions on Graphics* or any other publication.

B. Petitioner provides no evidence showing when any library actually received the July 2006 edition of *ACM Transactions on Graphics*.

Even assuming NEARMAP-1004 accurately reflects a paper published as part of the July 2006 edition of *ACM Transactions on Graphics*, Petitioner has not provided any evidence showing when any library actually received the July 2006 edition of that periodical series.

The only theory of accessibility set forth in the Munford Declaration with respect to Snavely is availability through the Penn State University library. Yet, the Munford Declaration fails to provide any evidence, beyond assumptions, regarding when the Penn State library ***actually received*** the July 2006 edition of *ACM Transactions on Graphics*. In fact, it is not clear from the evidence submitted that the Penn State library even had the July 2006 edition at the time of the Munford Declaration. Notably, the evidence Petitioner submitted shows that the year 2006 editions were not located with the other editions of *ACM Transactions on Graphics*, but were instead "***[b]eing transferred between libraries***." NEARMAP-1015, p. 11.[3] Neither the Petition nor the Munford

[3] Although the Munford Declaration refers to Appendix SNAVELY01 as "the MARC record," (NEARMAP-1015, [8]) that Appendix includes two separate web documents, as shown in the URLs listed in the top right corner of pages 9 and 11

Declaration explains this blatant discrepancy.

The MARC record in Appendix SNAVELY01 also fails to provide a date of when the July 2006 edition was received, catalogued, or shelved at Penn State. The only MARC record provided is for the periodical *series* and bears a date of February 1999 in field 008—seven years before the July 2006 edition at issue. NEARMAP-1015, [9]. That MARC record provides no information regarding when the Penn State library received the *particular* edition at issue.

While the Munford Declaration states that the July 2006 edition "was made available to the public ***shortly after*** its initial release in July 2006," the declaration cites no evidence to support that conclusory "determination"—or to explain how many months "shortly after" might be. NEARMAP-1015, [9] (emphasis added). In stating that the July 2006 edition "was made available to the public ***shortly after*** its initial release in July 2006," Munford does not clarify whether he is referring to public availability at the Penn State library or somewhere else. NEARMAP-1015, [9] (emphasis added). To the extent the Munford Declaration intended to refer to the acquisition and shelving practices at Penn State specifically, the declaration

---

of NEARMAP-1015. What the Munford Declaration refers to as an "'Availability' field" (NEARMAP-1015, [8]) is not actually part of the "marc_view" page. NEARMAP-1015, pp. 9-10.

fails to cite any evidence regarding those practices. Nor does Munford have any particular or personal knowledge of such practices at the Penn State library, given that he has never been employed there. *See* NEARMAP-1015, Appendix CV.

In sum, Petitioner has presented only conclusory statements and conjecture about when NEARMAP-1004 might have been available to the public in the Penn State library. This was the only theory of accessibility presented in the Munford Declaration. Petitioner has not presented any evidence—other than assumptions—to identify *when* the reference would have been available at that library. Particularly given the short window of time between the purported publication of Snavely and the priority date of the '518 Patent, Petitioner's conclusory evidence is insufficient to demonstrate a reasonable likelihood that Petitioner could prevail in establishing NEARMAP-1004 as a printed publication.

C. Petitioner provides no evidence to explain how Snavely was indexed or catalogued in 2006.

Finally, even if Petitioner's evidence could support a determination that NEARMAP-1004 was published in July 2006 in *ACM Transactions on Graphics* and available at the Penn State library before the priority date of the '518 Patent, technical accessibility is insufficient to establish that a reference is a printed publication. *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 773 (Fed. Cir. 2018) ("'[P]ublic accessibility' requires more than technical accessibility."). Public accessibility requires meaningful indexing or cataloging

such that an interested POSITA could have located the reference through the exercise of reasonable diligence. *Id.* at 774. Here, the Munford Declaration fails to show that Snavely was indexed, catalogued, or shelved, or how a POSITA exercising reasonable diligence would have found Snavely. In fact, the Munford Declaration says nothing about how, if at all, NEARMAP-1004 was indexed. This is particularly problematic given that the only MARC record provided regarding NEARMAP-1004 is the MARC record for the periodical *series* of *ACM Transactions on Graphics*, i.e., a MARC record that is not tied specifically to NEARMAP-1004 itself. Accordingly, even if the Munford Declaration had identified some sort of indexing for the *series* (which it did not), such indexing would still be insufficient to establish indexing with respect to the specific reference at issue here—NEARMAP-1004. Without *any* evidence explaining how a POSITA could have located NEARMAP-1004 using reasonable diligence, the Munford Declaration as a matter of law fails to establish a reasonable likelihood that Snavely was publicly available at any point in time, let alone prior to the critical date. Therefore, the Munford Declaration fails to establish a reasonable likelihood that Snavely qualifies as a prior art printed publication relative to the '518 Patent. *See*, *Hulu, LLC v. Sound View Innovations*, IPR2018-01039, Paper 29, p. 16 ("[T]here is no presumption in favor of [] finding a reference to be a printed publication under § 42.108(c) or any other authority. … [T]he burden is on

the petitioner to identify with particularity evidence sufficient to establish a reasonable likelihood that the reference was publicly accessible before the critical date of the challenged patent, and therefore that there is a reasonable likelihood that it qualifies as a printed publication.").

* * *

For at least these reasons, Petitioner has failed to meet its burden of establishing a reasonable likelihood of the public availability of Snavely prior to the critical date of the '518 Patent. Accordingly, Petitioner has failed to establish that Snavely is available as a prior art printed publication to the '518 Patent. As a result, Petitioner necessarily cannot meet its burden under 37 C.F.R. § 42.104(b)(4) of "specify[ing] where each element of the claim is found in the prior art patents or printed publications relied upon." Because the petition relies on Snavely in every ground raised, the Board should deny institution.

V. THE BOARD SHOULD DENY INSTITUTION UNDER THE *FINTIV* FRAMEWORK

Patent Owner asserted the '518 Patent, as well as seven other patents, against Petitioner in *Eagle View Technologies, Inc. and Pictometry International Corp. v. Nearmap US, Inc.*; 2:21CV00283, (D. Utah). EX2003. As discussed below, the Board should exercise its discretion in view of *Fintiv* to deny institution under 35 U.S.C. § 314(a). *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5-6 ("*Fintiv*").

A. Factor 1 is Neutral (Likelihood of a Stay)

Fintiv factor 1 is neutral because Petitioner has not requested a stay in the district court proceeding. Given that no motion to stay has been filed, the Board should not infer the outcome of any potential motion. *See Dish Network L.L.C. v. Broadband iTV, Inc.*, IPR2020-01359, Paper 15 at 11 ("It would be improper to speculate…what the [] court might do regarding a motion to stay").

B. Factor 2 is Neutral (Timing of Trial)

Fintiv factor 2 is neutral as Petitioner admits that "any comparison of a projected FWD date against potential trial dates is, at best, speculative." Petition, p. 52. And even if the Board does issue a final written decision before the district court proceeding concludes, the ongoing district court proceeding still impacts the efficiency concerns addressed in the *Fintiv* framework. *Fintiv* at 9 ("If the court's trial date is … ***significantly after*** the projected statutory deadline, the decision whether to institute will ***likely implicate other factors*** … such as the resources that have been invested in the parallel proceeding.")

C. Factor 3 Favors Denial (Investment in Parallel Proceeding)

Factor 3 weighs in favor of denial because the parties will have invested significantly in the district court proceeding before the institution decision. The Board is projected to issue its institution decision by November 5, 2022. Before that date, Patent Owner will have served Final Infringement Contentions on

August 29, 2022, and Petitioner will have served Final Invalidity Contentions on September 6, 2022 and Final Non-Infringement Contentions on September 30, 2022. *See* EX2004. That is, Patent Owner and Petitioner will have invested significantly in the merits of the invalidity positions prior to the institution decision. *See Sand Revolution II, LLC v. Cont'l Intermodal Grp.–Trucking LLC*, IPR2019-01393, Paper 24 at 10 (showing the Board emphasized the focus of factor 4 is on the amount invested "in the merits of the invalidity positions."). Accordingly, by the time the Board issues its institution decision, the parties will have invested significantly in the district court proceeding thereby weighing in favor of denial.

D. Factor 4 Favors Denial (Overlap of Issues)

Factor 4 weighs in favor of discretionary denial, because Petitioner has not foreclosed the likelihood of having duplicative invalidity positions. Specifically, Petitioner has made no stipulation to avoid overlapping invalidity grounds presented in the district court proceeding and the Petition. Thus, the potential for overlap of issues favors denial.

E. Factor 5 Favors Denial (Overlapping Parties)

Factor 5 weighs in favor of discretionary denial because the same parties are involved in both proceedings.

F. Factor 6 Favors Denial (Other Circumstances)

Factor 6 also weighs in favor of denial because the Petition is remarkably weak. As discussed above, the Petition has not shown a reasonable likelihood that the purported combination of references render the claims obvious. Therefore, it would be a waste of the Board's and the parties' resources to address Petitioner's remarkably weak grounds in this proceeding.

Accordingly, a holistic analysis of the *Fintiv* factors shows that the *Fintiv* factors weigh in favor of discretionary denial.

VI. CONCLUSION

Patent Owner asks that the Board deny institution of the Petition for *Inter Partes* Review for any or all of the reasons presented above.

Respectfully submitted,

Dated: August 5, 2022

/Kyle L. Howard/
Kyle L. Howard
Registration No. 67,568
Lead Counsel for Patent Owner

VII. CERTIFICATE OF WORD COUNT

Under 37 C.F.R. § 42.24(b)(1), the undersigned attorney for Patent Owner, Pictometry International Corp., declares that the argument section of this Patent Owner's Preliminary Response (Sections I-VI) has 9,100 words, according to the word count tool in Microsoft Word™.

/Kyle L. Howard/
Kyle L. Howard
Registration No. 67,568
Lead Counsel for Patent Owner

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Pictometry International Corp. Patent Owner	§ § § § §	Patent Owner's Preliminary Response U.S. Patent No. 8,593,518

CERTIFICATE OF SERVICE

The undersigned certifies, under 37 C.F.R. §§ 42.105 and 42.6, that service was made on Petitioner's counsel as detailed below.

Date of service August 5, 2022

Manner of service Electronic Service: IPR53317-0004IP1@fr.com; PTABInbound@fr.com; axf-ptab@fr.com; tar@fr.com; dsmith@fr.com; klima@fr.com; darno@fr.com

Documents served Patent Owner's Preliminary Response, including Exhibit List; Exhibits 2001 through 2004

Persons served W. Karl Renner
Thomas Rozylowicz
Daniel D. Smith
W. Ryan Klima
Patrick Darno
Fish & Richardson P.C.
3200 RBC Plaza
60 South Sixth Street
Minneapolis, MN 55402

/Kyle L. Howard/
Kyle L. Howard
Registration No. 67,568
Lead Counsel for Patent Owner

UNITED STATES PATENT AND TRADEMARK OFFICE

_____

BEFORE THE PATENT TRIAL AND APPEAL BOARD

_____

NEARMAP US, INC.
Petitioner

v.

EAGLE VIEW TECHNOLOGIES, INC.
Patent Owner

_____

IPR2022-01009

U.S. Patent 8,670,961

_____

PATENT OWNER'S PRELIMINARY RESPONSE TO PETITION FOR *INTER PARTES* REVIEW

Table of Contents

I. Introduction 5

II. The Petition cannot establish obviousness of any challenged claim for four independent reasons, any one of which is sufficient to deny institution. 7

A. Petitioner fails to demonstrate that the references "calculate" or "determin[e]" a pitch "based on the image analysis." 8

B. The Petition fails to identify any "calibration module" in the references. 17

C. The Petition fails to show that Littleworth necessarily discloses a "top plan view" of a roof. 18

D. The Petition does not explain why a POSITA would have been motivated to combine Littleworth and Linder as suggested in the proposed combination. 23

III. The Petition also fails to demonstrate additional elements of independent Claims 21 and 22. 25

A. The Petition fails to address all the claim language in Claim Elements 21.5, 21.6, 22.5, and 22.6. 26

B. The Petition fails to demonstrate correlating two aerial images where one image is a "top plan view" and the other is an "oblique perspective view." 28

C. The Petition never addresses the "determining pitch" element of independent Claim 22. 33

IV. The Petition does not establish that Littleworth and Linder are prior art. 34

A. Littleworth lacks any date or publication information, and the Petition fails to remedy that deficiency. 35

B. The particular MARC records submitted by Petitioner do not support

Petitioner's theories of accessibility for at least Littleworth and Linder....38

V. The Board should deny institution under the *Fintiv* framework. 42

A. Factor 1 Favors Denial (Likelihood of a Stay)....42

B. Factor 2 is Neutral (Timing of Trial)....43

C. Factor 3 Favors Denial (Investment in Parallel Proceeding) 44

D. Factor 4 Favors Denial (Overlap of Issues) 44

E. Factor 5 Favors Denial (Overlapping Parties)....45

F. Factor 6 Favors Denial (Other Circumstances)....45

VI. Conclusion 45

VII. Certificate of Word Count 46

PATENT OWNER'S EXHIBIT LIST[1]

September 16, 2022

EX2001	Declaration of Chandrajit Bajaj, Ph.D.
EX2002	*Curriculum Vitae* of Chandrajit Bajaj, Ph.D.
EX2003	Complaint, *Eagle View Technologies, Inc. and Pictometry International Corp. v. Nearmap US, Inc.*, No. 2:21-cv-00283, ECF No. 2 (D. Utah) (filed May 4, 2021) (Oberg, J.)
EX2004	Amended Patent Case Scheduling Order, *Eagle View Technologies, Inc. and Pictometry International Corp. v. Nearmap US, Inc.*, No. 2:21-cv-00283, ECF No. 99 (D. Utah July 26, 2022) (Oberg, J.)
EX2005	040 - Cataloging Source (NR), Library of Congress, https://www.loc.gov/marc/bibliographic/bd040.html
EX2006	Search the Codes, MARC Code List for Organizations, Library of Congress, https://www.loc.gov/marc/organizations/org-search.php (search "dlc" in "Search by Code in MARC ORG CODE")
EX2007	Search the Codes, MARC Code List for Organizations, Library of Congress, https://www.loc.gov/marc/organizations/org-search.php (search "Pennsylvania State University" in "Search by Organization")
EX2008	Search the Codes, MARC Code List for Organizations, Library of Congress, https://www.loc.gov/marc/organizations/org-search.php (search "rochester institute of technology" in "Search by Organization")
EX2009	U.S. District Court for the District of Utah, Local Rules of Patent Practice, https://www.utd.uscourts.gov/sites/utd/files/Dec%202021%20Patent%20Rules.pdf

[1] Citations to non-patent document exhibits are to the original page numbering in the exhibits, unless the Bates-stamped page numbers are specifically referenced.

I. Introduction

Patent Owner, Eagle View Technologies, Inc., submits this Preliminary Response to the Petition ("Petition") (Paper 2). The Board should deny institution of the Petition for at least the following reasons:

First, the Petition's analysis is deficient as to ***every challenged claim*** because it fails to demonstrate (and sometimes even address) key aspects of those claims. Specifically, the Petition has at least the following fatal flaws:

- The Petition fails to demonstrate how the references "calculate" or "determin[e]" a pitch "based on the image analysis." *See infra* Section II.A.
- The Petition fails to identify any "calibration module" in the references. *See infra* Section II.B.
- The Petition fails to provide evidence supporting a finding that the primary reference, Littleworth, inherently discloses a "top plan view" of a roof. *See infra* Section II.C.
- The Petition fails to explain why a POSITA would have been motivated to combine the references in the way proposed by Petitioner. *See infra* Section II.D.

The above four flaws impact the analysis of ***every challenged claim***. Accordingly, the Board should deny institution because the Petition cannot, as a matter of law, demonstrate unpatentability of any challenged claim.

Second, the Petition is even more deficient with respect to independent claims 21 and 22. The following three issues further confirm that Petitioner cannot establish unpatentability as to those independent claims:

- The Petition fails to address all the claim language in Claim Elements 21.5, 21.6, 22.5, and 22.6. *See infra* Section III.A.
- The Petition never demonstrates correlating two images that are a top plan view and an oblique perspective view. *See infra* Section III.B.
- The Petition does not address the "determining pitch" element of independent Claim 22 whatsoever. *See infra* Section III.C.

These additional deficiencies in the Petition's analysis of independent Claims 21 and 22 further confirm that the Board should deny institution.

Third, the Board should deny institution because Petitioner has failed to establish that at least two of the references relied upon in the proposed combination (Littleworth and Linder) are prior art to the '961 Patent. Petitioner relies solely on the Declaration of June Munford to allegedly provide authentication and public availability evidence for those references. However, the Munford Declaration fails to authenticate and prove the public availability of those references prior to the critical date. *See infra* Section IV.

Fourth, the Board should deny institution under 35 U.S.C. § 314(a) because institution of this Petition would be a significant waste of resources for the Board, the parties, and the district court. *See infra* Section V.

In sum, Petitioner repeatedly fails to present arguments and evidence sufficient to prove its case. In light of the fundamental failures outlined above and detailed below, instituting this case and litigating it to final written judgment would be a waste of the Board's (and the parties') resources. Thus, the Board should deny institution.

II. The Petition cannot establish obviousness of any challenged claim for four independent reasons, any one of which is sufficient to deny institution.

The Board should deny institution because the Petition's analysis cannot establish unpatentability of any challenged claim.

This section addresses four independent deficiencies with the Petition's analysis, each of which undermines the Petition's challenge as to every challenged claim. Thus, the Board should deny institution for at least each of these reasons.

A. Petitioner fails to demonstrate that the references "calculate" or "determin[e]" a pitch "based on the image analysis."

Every independent claim challenged by Petitioner requires either "calculat[ing] a pitch" (Claim Element 1.7)[2] or "determin[ing] [a] pitch" (Claim Elements 21.7, 24.4, and 29.4 and Claim 22) "based on the image analysis" (all claims). As discussed below in Section III.C, Petitioner has not addressed the "determining pitch" aspect of Claim 22 at all. However, even where Petitioner does address the calculating/determining a pitch aspect in other claims, Petitioner's analysis does not demonstrate such a calculation or determination, much less that the calculation or determination is "based on the image analysis." EX2001, ¶37.

Petitioner substantively addresses this aspect of the claims at pages 27-31 of the Petition. In that analysis, Petitioner appears to rely, alternatively, on Littleworth or Middlebrook to disclose this aspect. Each reference is addressed below.

First, as to Littleworth, Petitioner states that Littleworth's Figure 5 "shows a three-dimensional model of a building including a pitched roof having two sections." Petition, 27-28 (citing NEARMAP-1005, Fig. 5). Petitioner then concludes that "[t]he inclusion of a pitched roof in Littleworth's three-dimensional model of the

[2] For ease and clarity, Patent Owner refers to all claim elements using the numerical designations used in the Petition.

roof indicates that Littleworth's system made a determination of the pitch of the roof shown in the aerial images from which the model was generated." Petition, 28. Petitioner also refers to Figure 2 of Littleworth, which Petitioner states is another "three-dimensional model[] of pitched roofs having multiple roof sections." Petition, 28-29. Petitioner then reiterates that "because Littleworth teaches that its three-dimensional models are generated based on aerial images, the inclusion of these pitched roof sections in the three dimensional model of FIG. 2 indicates that the system calculated the pitch of each roof section." Petition, 29. In alleged support for this conclusory statement, Petitioner cites a statement from page 755 of Littleworth simply stating that "[r]oof detail was digitised indicating their pitch." Petition, 29 (citing NEARMAP-1005, p. 755).

However, Petitioner's analysis of Littleworth, summarized above, does not identify any disclosure from Littleworth stating that Littleworth actually *calculates or determines* a pitch, let alone that Littleworth does so based on performing aerial image analysis. EX2001, ¶40. Instead, Petitioner appears to rely on what it believes is an inherent disclosure in Littleworth that creating a three-dimensional model of a roof necessarily requires the system to calculate or determine the pitch of each roof section shown in the model. *See* Petition, 28-29. But Petitioner has not explained why that must be true. In fact, depicting a three-dimensional model of a roof does not necessarily mean that the system calculated or determined the actual pitch of the

roof sections depicted in the model based on performing aerial image analysis. EX2001, ¶40.

The statement from page 755 of Littleworth that "[r]oof detail was digitised indicating their pitch" merely indicates that an angled roof is generally shown in the visualized model. EX2001, ¶43. But, generally depicting an angled roof *visually* in a 3D rendering is not the same as calculating or determining a numerical pitch value of a roof. EX2001, ¶43. That is, simply because the roof is shown having a pitch does not mean that the pitch of the roof was calculated or determined, let alone based on performing aerial image analysis. EX2001, ¶43.

Moreover, as Littleworth explains with respect to its Inner-city redevelopment areas example (which includes Figure 5 of Littleworth), "[i]nitially features are digitised as line string elements and where possible higher order elements such as shapes," and "[t]hese data act as a background template from which ***shapes representing roofs and walls are interpolated***." NEARMAP-1005, 756. Interpolation here generally refers to the process of filling in gaps in shapes (e.g., representing roof shape given only digital features and approximation outlines), and where information is not otherwise available to accurately reflect the content of gaps in a computed image. EX2001, ¶41; *see* NEARMAP-1012, p. 53 (discussing "interpolation of missing points" in the context of filling "gaps"). Thus, the

interpolated roof sections in Littleworth do not necessarily reflect a calculation or determination of the pitch of those roof sections. EX2001, ¶41.

Finally, Littleworth notes the "accuracy requirement" for different parts of a modeling project can vary. NEARMAP-1005, 756. In the Inner-city redevelopment area example, Littleworth states that "[t]he accuracy requirement for this project varied according to the subject, detailed facades +/-30mm, building lines +/-150mm." NEARMAP-1005, 756. That degree of expected inaccuracy in the model of up to 150 millimeters (approximately 5.9 inches) for building lines shows that the model is *not* calculating or determining the pitch of the roof sections. EX2001, ¶42. Indeed, given that pitch is often measured in terms of a rise in inches per foot of distance, 150 mm (about 5.9 inches) of error would significantly alter the pitch calculation or determination of a given roof section. EX2001, ¶42. Thus, Petitioner is incorrect to assume that generating a 3D visualization necessarily "calculates" or "determines" a pitch of roof sections in that visualization. EX2001, ¶42.

Thus, because the calculation or determination of pitch is not necessarily present in Littleworth, and the Petition provides no extrinsic evidence making clear that the missing calculation or determination is necessarily present, Petitioner has not established that Littleworth inherently discloses "calculating" or "determining" a roof pitch and based on aerial image analysis. EX2001, ¶43; *see PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1195–96 (Fed. Cir. 2014) ("A party must,

therefore, meet a high standard in order to rely on inherency to establish the existence of a claim limitation in the prior art in an obviousness analysis—the limitation at issue ***necessarily must be present***, or the natural result of the combination of elements explicitly disclosed by the prior art." (emphasis added)); *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1295 (Fed. Cir. 2002) (inherency "requires that the missing descriptive material is 'necessarily present,' not merely probably or possibly present, in the prior art"); *Cont'l Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991) ("when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence" that "make[s] clear that the missing descriptive matter is necessarily present in the thing described in the reference").

Thus, Littleworth does not disclose this aspect of the claims.

Second, regarding Middlebrook, Petitioner cannot establish that Middlebrook discloses "calculating" or "determining" a pitch based on aerial image analysis because the portions of Middlebrook cited by Petitioner merely provide basic information about setting up AutoCAD for drawing and displaying and, then, define what an "angular dimension" means for the AutoCAD model. EX2001, ¶44. Specifically, Petitioner relies on the following pages and figure of Middlebrook: pages 42, 232-233, and Figure 10-3. *See* Petition, 29-31.

Citing page 42 of Middlebrook, Petitioner contends that "Middlebrook teaches automatically 'calculat[ing] distances and dimensions' from a three-dimensional model." Petition, 29-30 (citing NEARMAP-1006, p. 42). This cited portion of Middlebrook does not teach what Petitioner suggests. EX2001, ¶45. Page 42 of Middlebrook is part of Middlebrook's Chapter 3, titled "Setup for Success" that discusses "drawing setup," including "the decisions you need to make ***before*** ***you set up a new drawing***." EX2001, ¶45. Page 42 does *not* describe automatic calculations of distances or dimensions from an image analysis. NEARMAP-1006, p. 42; EX2001, ¶45. Instead, page 42 of Middlebrook simply states that, when drawing in AutoCAD, a user may draw in "real-life units" such as "feet and inches, millimeters," etc., and AutoCAD will then "calculate distances and dimensions for you and add them to the drawing." NEARMAP-1006, p. 42. That is categorically different than performing an image analysis and calculating or determining dimensions of objects, let alone a roof pitch, based on the image analysis. EX2001, ¶45. In fact, this page of Middlebrook makes clear that even this most basic functionality of AutoCAD ***cannot be performed*** without the user providing the basic dimension parameters for the drawing. NEARMAP-1006, p. 42. This is shown in the excerpt of Middlebrook included below:

> **Electronic paper:** The most important thing you can do to make using AutoCAD fun is to work on a correctly set up drawing so that your screen acts like paper, only smarter. When drawing on real paper, you constantly have to translate between units on the paper and the real-life units of the object you're drawing. But when drawing in AutoCAD, you can draw directly in real-life units — feet and inches, millimeters, or whatever you typically use on your projects. AutoCAD can then calculate distances and dimensions for you and add them to the drawing. You can make the mouse pointer jump directly to hot spots on-screen, and a visible, resizable grid gives you a better sense of the scale of your drawing. However, this smart paper function works well only if you tell AutoCAD some crucial parameters for your specific drawing. AutoCAD can't really do its job until you tell it how to work.

NEARMAP-1006, p. 42; EX2001, ¶45. As confirmed on that same page, the *user* is responsible for providing the AutoCAD system with "drawing scale, paper size, and units," and "[t]he computer ***can't*** aid [the user's] drafting (or design)" unless the user provides such information. NEARMAP-1006, p. 42 (emphasis added). Nothing about this disclosure from Middlebrook discloses or suggests calculating or determining dimensions based on an image analysis, let alone calculating or determining the pitch of a roof based on an image analysis. EX2001, ¶45.

The additional cited pages of Middlebrook (pages 232 and 233) and Middlebrook's Figure 10-3 also fail to disclose determining or calculating the pitch of a roof. EX2001, ¶46. Pages 232 and 233 of Middlebrook, which include Figure 10-3, are not describing any calculations at all. Instead, these pages are merely a "review" of "AutoCAD dimensioning terminology." NEARMAP-1006, p. 231; EX2001, ¶46. Thus, when Middlebrook refers to "[a]ngular dimensions" on

page 233, Middlebrook is merely defining that term: "An *angular* dimension calls out the angular measurement between two lines, the two endpoints of an arc, or two points on a circle." NEARMAP-1006, p. 233 (emphasis is in Middlebrook); EX2001, ¶46. Similarly, Figure 10-3 of Middlebrook, also on page 233, simply depicts the "[c]ommon types of dimensions" defined on pages 232 and 233. NEARMAP-1006, p. 233, Fig. 10-3. Neither of these cited disclosures refers to the pitch of a roof. EX2001, ¶46. In fact, the cited portions of Middlebrook are completely untethered from ***any*** structure. EX2001, ¶46. Middlebrook is simply showing an angle between two lines of a model in the abstract. NEARMAP-1006, pp. 232-233, Fig. 10-3; EX2001, ¶46. Nothing in the cited disclosure from Middlebrook discloses *calculating* or *determining* the pitch of a roof, let alone based on aerial image analysis. EX2001, ¶46.

Finally, regardless of which alternative is at issue (Littleworth or Middlebrook), Petitioner never explains how any purported calculation or determination of pitch in those references is "***based on the image analysis***." EX2001, ¶47. This feature is required by **every challenged claim**, yet Petitioner never addresses it. Instead, Petitioner glosses over this aspect without explaining how any calculation or determination would be based on what Petitioner relies on to show "image analysis" in Claim Element 1.6 (correlating two images based on Linder). As explained above in this section, Littleworth does not disclose calculating

or determining a pitch of a roof section. EX2001, ¶47. But, even assuming *arguendo* that Littleworth did, Petitioner has not explained how that calculation or determination is "based on the image analysis" of Linder as required by Petitioner's combination for every claim of the '961 Patent. EX2001, ¶47; *see also* Petition, 15-16 (proposed combination).

Further, as to Middlebrook, as explained earlier in this section, the purported measurements in Middlebrook do not represent a calculation or determination of a roof pitch. EX2001, ¶47. Nor are they the product of any sort of "image analysis." EX2001, ¶47. Instead, the cited portions of Middlebrook merely define the concept of an "angular dimension" and illustrate an abstract angle between two lines. NEARMAP-1006, pp. 232-233, Fig. 10-3. But again, even assuming *arguendo* that Middlebrook could be construed as disclosing a calculation or determination of roof pitch, Petitioner does not explain how that calculation is "based on the image analysis." EX2001, ¶47. Petitioner has not cited anything, from any reference or combination of references, that teaches the pitch of a roof being calculated or determined based on ***any*** sort of "image analysis"—much less based on the correlation of images from Linder that Petitioner relies on to purportedly teach the claimed "image analysis" aspects of the claims (*see*, *e.g.*, Claim Element 1.6, which the Petition discusses at pages 26-27). EX2001, ¶47. Accordingly, because Petitioner fails to address this aspect of the claim element, Petitioner cannot establish

obviousness of the Challenged Claims, all of which include a similar claim element. EX2001, ¶47.

B. The Petition fails to identify any "calibration module" in the references.

Every independent claim of the '961 Patent that Petitioner has challenged requires a **"calibration module."** *See* Claim Elements 1.2 and 1.5, Claim Element 21.4, Claim Element 22.4, Claim Element 24.3, and Claim Element 29.3. But Petitioner never identifies a "calibration module" in any of the references it relies upon. EX2001, ¶48. Instead, Petitioner refers to the general statement from Linder that "[t]he programme system is subdivided into several modules to ensure a flexible handling." NEARMAP-1012, 79; Petition, 22. From this, Petitioner concludes that "[i]t would have been obvious to a POSITA to subdivide the combined software system of Littleworth, Linder, and Middlebrook into different modules in order to group related functionality, such as the roof estimation and calibration functionality described below, because such subdivision was well-known and widely used in the art prior to the Critical Date." Petition, 22. Although Petitioner also cites NEARMAP-1008, 8:20-24, 12:15-25 in support of its conclusion, the cited portions of NEARMAP-1008 do not refer to a "calibration module" as required by the Challenged Claims. Nor is the teaching of NEARMAP-1008 part of Petitioner's proposed combination. *See* Petition, 15-16. The failure to show a "calibration

module" in the references undermines Petitioner's obviousness analysis of *all* Challenged Claims. EX2001, ¶48.

Similarly, Petitioner's failure to show a "calibration module" in the references is further problematic with respect to Claim Elements 1.5, 24.3, and 29.3, each of which require "**calibration information**" to be "***received from the calibration module***." EX2001, ¶49. With respect to those three independent claims (Claims 1, 24, and 29), Petitioner never explains how any "calibration information" is "received from the calibration module." EX2001, ¶49. Thus, Petitioner cannot establish the unpatentability of at least independent claims 1, 24, and 29 because it has failed to demonstrate where this aspect of the claims is taught or rendered obvious by the proposed combination of the references. EX2001, ¶49.

C. The Petition fails to show that Littleworth necessarily discloses a "top plan view" of a roof.

Every independent claim challenged in the Petition requires a first aerial image that is a "top plan view of the roof" and a second aerial image that is "an oblique perspective view of the roof."[3] *See* Claim Elements 1.4, 21.2, 22.2, 24.2, 29.2. The Petition addresses this claim element at pages 24 and 25 of the Petition.

[3] Independent Claim 29 refers to an "oblique view of the roof" instead of an "oblique perspective view" of the roof.

However, Petitioner cannot establish that the only reference it relies on for this claim element, Littleworth, discloses an aerial image showing a "top plan view" of a roof. EX2001, ¶50.

As a preliminary matter, none of the aerial images shown in Littleworth are a top plan view of a roof. EX2001, ¶51. That is, there is no explicit disclosure by Littleworth of using aerial images showing a top plan view of a roof as required by all challenged claims. EX2001, ¶51. Instead, Petitioner relies on Littleworth's language regarding "vertical aerial photography" as disclosing a top plan view of a roof. Petition, 24 (citing NEARMAP-1005, 755, 756, Fig. 3). However, Littleworth's "vertical aerial photography" does not necessarily equate to aerial images showing a top plan view, as alleged by the Petitioner. EX2001, ¶51. In this regard, Petitioner does not explain why Littleworth's reference to "vertical aerial photography" ***necessarily*** includes an aerial image having a "top plan view" of a roof. EX2001, ¶52. For example, the authors refer to "vertical aerial photography" on page 755 of Littleworth when discussing the Hatfield Aerodrome example, as well as on page 756 when discussing the Inner-city redevelopment area example. NEARMAP-1005, pp. 755-756. In the context of the Hatfield Aerodrome example, Littleworth states that "[s]uitable vertical aerial photography" was used in creating the "3-d model representing Hatfield Aerodrome," shown below in Figure 1. NEARMAP-1005, pp. 754-755, Fig. 1.

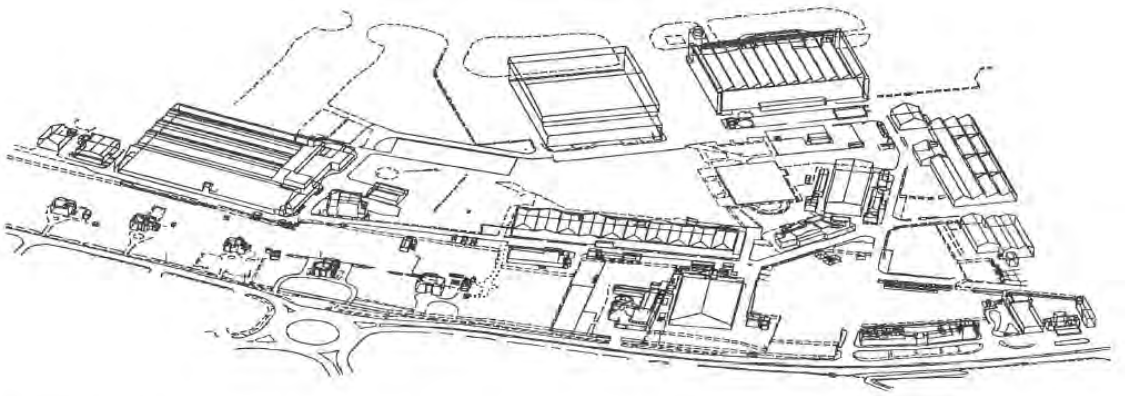


Fig. 1 3-d model representing Hatfield Aerodrome.

NEARMAP-1005, Fig. 1

As evident from the above 3-d model, Littleworth's Figure 1 includes information showing the sides and facades of certain buildings in the model. NEARMAP-1005, Fig. 1; EX2001, ¶53. A POSITA would have understood that such a model (one that shows sides of buildings) could *not* have been created using aerial images that only show top plan views of the Hatfield Aerodrome. EX2001, ¶53. This is because, as illustrated in the '961 Patent, a "top plan view" does not provide any information regarding the side of a building:

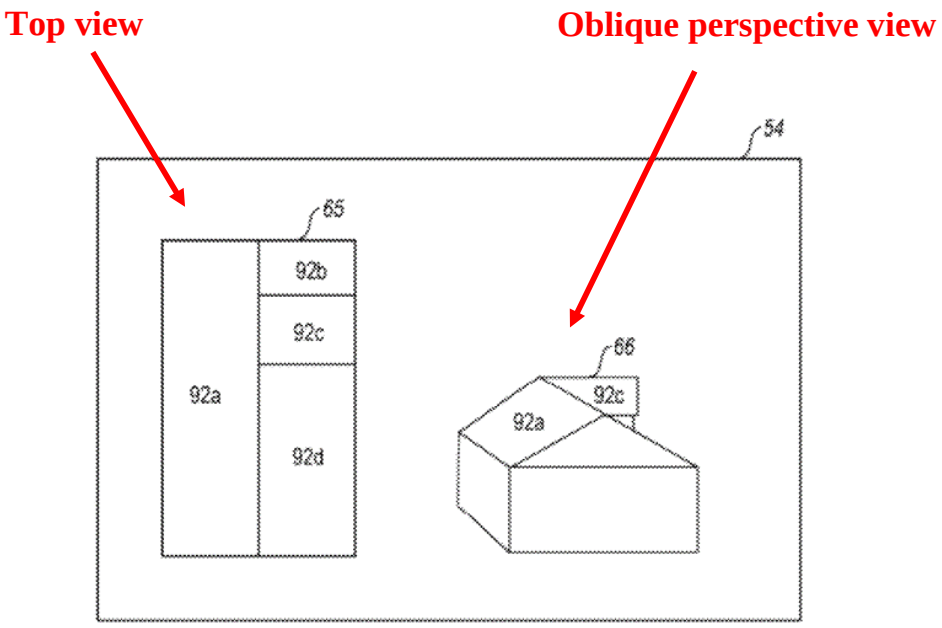


Fig. 3

NEARMAP-1001 ('961 Patent), Fig. 3 (annotated)

EX2001, ¶53.

However, Littleworth never discloses supplementing the "suitable vertical aerial photography" used in the Hatfield Aerodrome example with aerial oblique photographic images acquired independent of the vertical aerial photography. EX2001, ¶54. Instead, the only images Littleworth describes using for the Hatfield Aerodrome example are those of the "[s]uitable vertical aerial photography." NEARMAP-1005, p. 755. And, as discussed above, a POSITA would have understood that Littleworth's 3-d model shown in Figure 1 could *not* have been

created using aerial images that only show top plan views of the buildings. EX2001, ¶54.

Thus, to create the 3D model in Figure 1 of Littleworth, a POSITA would have understood that Littleworth's "suitable vertical aerial photography" must include aerial images showing oblique views of the various buildings. EX2001, ¶55. More importantly, a POSITA would have understood that Littleworth's Figure 1 for the Hatfield Aerodrome could have been created using *entirely* aerial photographic images that contain *only* oblique views. EX2001, ¶55. That is, a POSITA would have understood that Littleworth's Figure 1 could have been created without ever needing or using any aerial images that show a top plan view of a roof. EX2001, ¶55.

Accordingly, it is not ***necessarily*** true that Littleworth's "vertical aerial images," such as those used to create Figure 1 of the Hatfield Aerodrome example, would include a "top plan view" as required by the Challenged Claims. EX2001, ¶56. Thus, because aerial images having a top plan view are not necessarily present in Littleworth, and the Petition provides no extrinsic evidence making clear that an aerial image having a top plan view is necessarily present in Littleworth, Petitioner has not established that Littleworth inherently discloses an aerial image that is a "top plan view." EX2001, ¶56. Thus, Petitioner cannot demonstrate unpatentability as to any Challenged Claim. EX2001, ¶56.

D. The Petition does not explain why a POSITA would have been motivated to combine Littleworth and Linder as suggested in the proposed combination.

Petitioner also fails to explain why a POSITA would have been motivated to modify Littleworth to include Linder's purported calibration techniques, with a reasonable expectation of success, as suggested in Petitioner's proposed combination. Petition, 15-20. EX2001, ¶68. Specifically, Petitioner does not explain why a POSITA would have modified Littleworth to include the purported calibration techniques from Linder. EX2001, ¶68.

Pages 15 and 16 of the Petition describe Petitioner's proposed combination based on Littleworth, Linder, and Middlebrook. Petition, 15-16. There, Petitioner contends that a POSITA would have modified Littleworth "to calibrate at least one aerial image…as described by Linder." Petition, 15 ("Also in the combination, the system of Littleworth is modified ***to calibrate at least one aerial image*** and to correlate at least one of the 'vertical aerial' images and at least one 'oblique' aerial image in order to generate three-dimensional coordinates, ***as described by Linder***.").

Petitioner next addresses, on pages 16-20, the reasons why a POSITA would have combined Littleworth with Linder and Middlebrook. *See* Petition, 16-20. Notably, however, while the Petition spends multiple pages analyzing why a POSITA allegedly would have modified Littleworth to include Linder's teachings related to *correlation*, the Petition does not explain how or why a POSITA would

have modified Littleworth "to *calibrate* at least one aerial image…as described by Linder," as Petitioner proposes in its combination. Petition, 15 (emphasis added); EX2001, ¶¶69-70.

Further, the Petition does not remedy this deficiency when it addresses the particular claim elements that require "calibration information." Petition, 25-26 (Claim Element 1.5); *see also* Petition, 51 (Claim Elements 21.3 and 21.4), Petition, 53 (Claim Elements 22.3 and 22.4), Petition, 60 (Claim Element 24.3), and Petition, 61 (Claim Element 29.3). In fact, at that point, Petitioner's analysis becomes even more deficient because it brings in additional concepts, untethered to any reference, without explaining why a POSITA would have combined those additional concepts into Petitioner's proposed combination. Petition, 25-26; EX2001, ¶71. For example, after describing Linder's "calibration certificate[s]" and "camera manual[s]," the Petition contends that "[t]his information may be **combined with additional information supplied by an image database, such as altitude data of the image capture, in order to generate calibration information**, such as scale information, for the aerial images." Petition, 26. But the Petition never explains why a POSITA would have been motivated to make the combination Petitioner proposes. EX2001, ¶71. Petitioner also has not articulated why a POSITA would have had a reasonable expectation of success in modifying Littleworth "to calibrate

at least one aerial image…as described by Linder." Petition, 15; *see* Petition, 15-20; EX2001, ¶71.

Because Petitioner fails to establish (1) any reason why a POSITA would have been motivated to make the proposed combination and (2) a reasonable expectation of success in making the proposed combination, it is clear that Petitioner's proposed combination is based on a hindsight analysis, using the claims of the '961 patent as a roadmap. EX2001, ¶72. The proposed combination is not based on any reason or motivation as to why a POSITA would have made Petitioner's proposed combination regarding the purported calibration techniques of Linder. EX2001, ¶72.

Accordingly, for at least these reasons, Petitioner has not established the obviousness of any of the Challenged Claims because Petitioner has failed to explain its rationale for combining the references as proposed with respect to the purported calibration techniques of Linder. EX2001, ¶73.

III. The Petition also fails to demonstrate additional elements of independent Claims 21 and 22.

In addition to the deficiencies highlighted above, which impact all challenged claims, the Petition is even more deficient with respect to independent Claims 21 and 22. As such, the Board should deny institution for these additional reasons.

A. The Petition fails to address all the claim language in Claim Elements 21.5, 21.6, 22.5, and 22.6.

As shown in the table below, for Claim Elements 21.5 and 21.6, the Petition merely refers back to the Petition's analysis of element 1.6[4]:

Independent Claim 21	Petition's Analysis
Claim Element 21.5 correlating the first aerial image with the second aerial image within the plurality of aerial images	"*Supra* [1.6.]" (Pet. 52)
Claim Element 21.6 performing, by the at least one processor of the roof estimation machine, image analysis on the plurality of aerial images based on the correlation	"*Supra* [1.6]; [21.0]." (Pet. 52)

[4] Although the Petition's analysis of Claim Element 21.6 also refers back to the Petition's analysis of Claim Element 21.0, that citation appears to be for purposes of addressing "the at least one processor of the roof estimation machine" in Claim Element 21.6, given that Claim Element 21.0 does not address performing image analysis. *Compare* Claim Element 21.6, *with* Claim Element 21.0; EX2001, ¶57 n.5.

The Petition takes the same approach with respect to the similar elements of independent Claim 22,[5] as shown in the following table:

Independent Claim 22	Petition's Analysis
Claim Element 22.5 correlating the first aerial image with the second aerial image within the plurality of aerial images	"*Supra* [1.6.]" (Pet. 53)
Claim Element 22.6 performing, by the at least one processor of the roof estimation machine, image analysis on the plurality of aerial images based on the correlation	"*Supra* [1.6]; [21.0]." (Pet. 53)

[5] Again, though the Petition's analysis of Claim Element 22.6 also refers back to the Petition's analysis of Claim Element 21.0, that citation appears to be for purposes of addressing "the at least one processor of the roof estimation machine" in Claim Element 22.6, given that Claim Element 21.0 does not address performing image analysis. *Compare* Claim Element 22.6, *with* Claim Element 21.0; EX2001, ¶58 n.6.

Petitioner's analysis of Claim Elements 1.6 and 21.0 fails to address "image analysis on the plurality of images based on the correlation." Therefore, a simple cross-reference back to Claim Elements 1.6 and 21.0 is insufficient to establish a reasonable likelihood of success with respect to Claim Elements 21.5, 21.6, 22.5, and 22.6. EX2001, ¶¶57-59. In this regard, the referenced element of Claim 1 (Claim Element 1.6) reads: "**perform image analysis on at least two of the plurality of aerial images**." *See* Petition, 26. A quick comparison of this language in Claim Element 1.6 to the claim language provided in the tables above confirms that Claim Elements 21.5, 21.6, 22.5, and 22.6 have different language than Claim Element 1.6. Petitioner has entirely failed to explain how its analysis of Claim Element 1.6 discloses this different claim language. EX2001, ¶59.

Thus, Petitioner cannot show all the claim elements of Claims 21 and 22 because it has failed to address all the claim language of elements 21.5 and 21.6 of Claim 21, and elements 22.5 and 22.6 of Claim 22. EX2001, ¶60.

B. The Petition fails to demonstrate correlating two aerial images where one image is a "top plan view" and the other is an "oblique perspective view."

Petitioner's analysis of independent Claims 21 and 22 fails to establish obviousness as to those claims for an additional reason: Petitioner does not demonstrate that the proposed combination of the references would disclose or

render obvious "correlating the first aerial image with the second aerial image" (Claim Elements 21.5 and 22.5). EX2001, ¶61.

Claims 21 and 22 specifically require that "a first aerial image [] is a ***top plan view*** of the roof and a second aerial image [] is an ***oblique perspective view*** of the roof," acquired independent of each other and at different times. NEARMAP-1001, 18:47-50 (Claim Element 21.2), NEARMAP-1001, 19:19-22 (Claim Element 22.2). Thus, when Claim Elements 21.5 and 22.5 require correlating "the first aerial image with the second aerial image," they require correlating one of each type of image, i.e., correlating a top plan view image and an oblique perspective view image. EX2001, ¶62.

For its analysis of Claim Elements 21.5 and 22.5, Petitioner refers back to its analysis of Claim Element 1.6. Petition, 52-53. In the analysis of Claim Element 1.6, Petitioner contends that "Linder describes performing image analysis including correlating multiple aerial images (*e.g.*, the 'vertical aerial' and 'oblique' images from Littleworth)." Petition, 26.

Petitioner's analysis is flawed, however, because Linder does not disclose a correlation between a top plan view image and an oblique perspective view image. EX2001, ¶64. Specifically, in the analysis of Claim Element 1.6, Petitioner relies on the following pages and figures of Linder: pages 32, 40-41, 46-50, 65-69, 100-102, and Figures 15 and 17. Petition, 26-27. None of those pages or figures from Linder

show correlating two images, where one image is a top plan view and one image is an oblique perspective view. EX2001, ¶64. At best, those pages describe the general process for identifying control points used to correlate two aerial images (NEARMAP-1012, p. 40) having the same view, but taken from slightly different positions. EX2001, ¶64. This is shown in Figure 15 of Linder that Petitioner relies on:

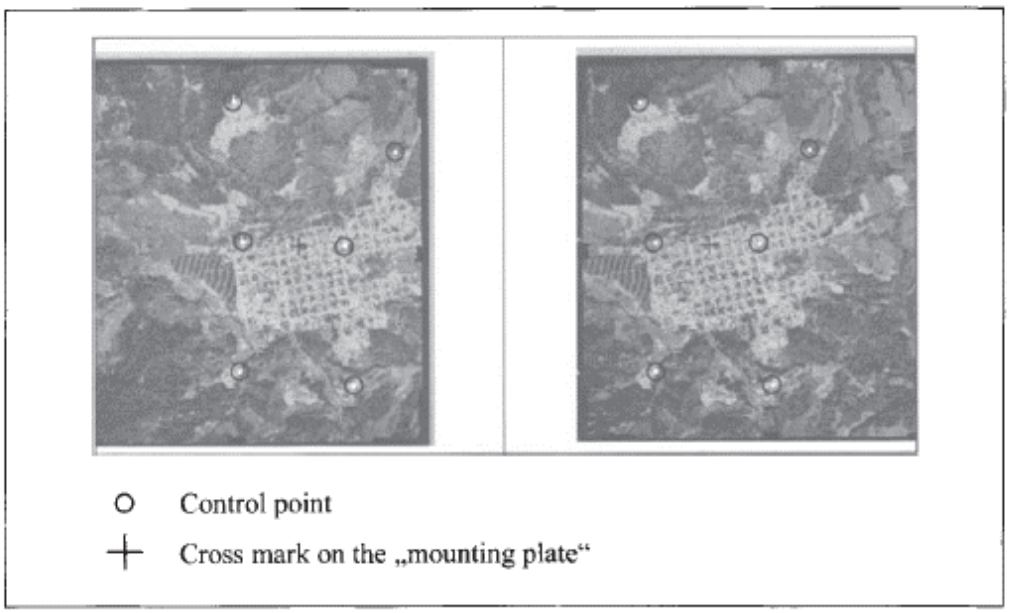


Fig. 15: Test image, model 157 / 158, showing the relative position of the images and the positions of the control points.

NEARMAP-1012 (Linder), Fig. 15

EX2001, ¶64.

As can be seen in Linder's Figure 15, above, the two images being correlated provide the same view, but from slightly different camera positions. NEARMAP-

1012, Fig. 15; EX2001, ¶65. The same is true of the second figure from Linder cited by Petitioner (Figure 17), shown below. EX2001, ¶65. The images in Linder's Figure 17 are captured from slightly different positions, but provide the same view of the landscape:

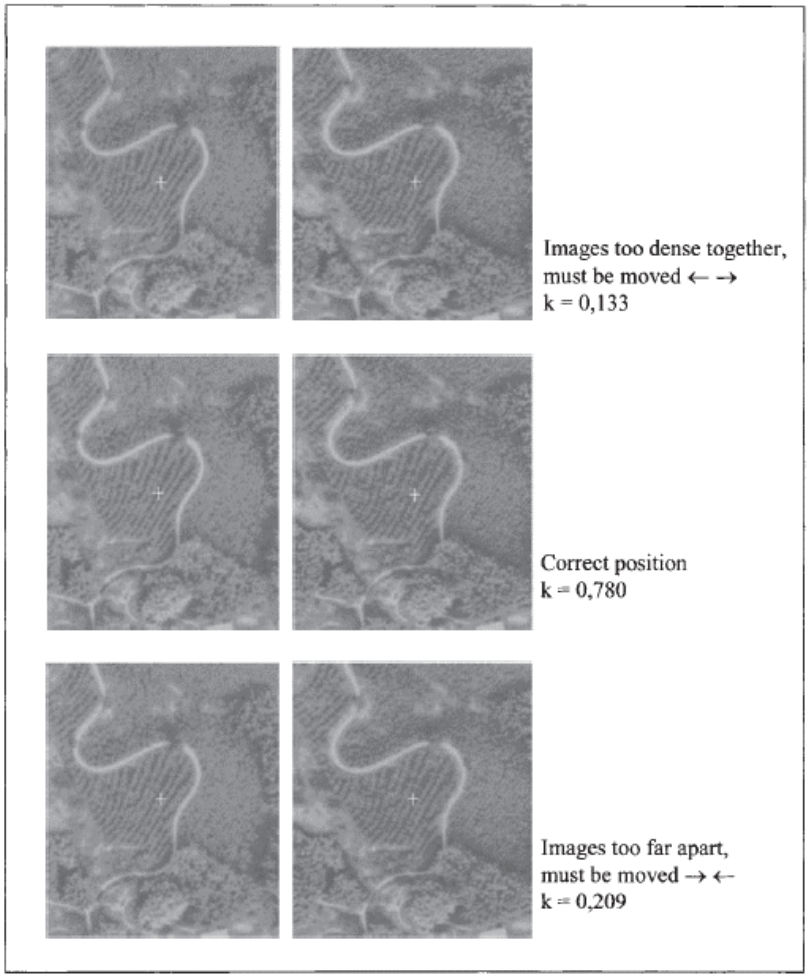


Fig. 17: Relation between image positions and correlation coefficient

NEARMAP-1012, Fig. 17

EX2001, ¶65.

Accordingly, Petitioner's assertion that "Linder explains that during this image matching process 'the programme compare[s] parts of ***two different images showing the same object from different positions***'" (Petition, 27) reads far too much into that statement from Linder. NEARMAP-1012 (Linder), 49; EX2001, ¶66. Linder's statement regarding comparing "two different images showing the same object from different positions" is *not* referring to one position being a top plan view, while the second position is an oblique perspective view, as the Petition suggests. NEARMAP-1012 (Linder), p. 49 (emphasis removed); EX2001, ¶66. The disclosure Petitioner cites from Linder refers to correlating two images showing the same object with the same view but from different positions, not different views (e.g., a top plan view and an oblique perspective view). EX2001, ¶66.

Furthermore, Linder describes how there can be "a lot of problems" correlating these images having the same views. NEARMAP-1012 (Linder), p. 49. For context, below is the full paragraph from Linder that includes the relevant statement:

> So far theory was covered. In practise, there may occur a lot of problems due to the fact that the programme has to compare parts of two *different* images showing the *same* object from *different* positions. Besides different brightness and contrast conditions we remember that the relief leads to radial-symmetrical displacements of the objects (see figure 19). As a result, neighbourhoods of corresponding points in neighbouring images are normally not completely identical or, in other words, the correlation coefficient will never reach the value 1. Nevertheless, in areas with good contrast and flat terrain values of more than 0.9 may occur.

NEARMAP-1012, p. 49; EX2001, ¶66. Thus, Petitioner has not explained how a POSITA would or could have used Linder's disclosure of a process for correlating two images having the same view, but taken from slightly different positions—that Linder notes has "a lot of problems" in practice—to correlate aerial images from two different views, let alone a top plan view and an oblique perspective view. EX2001, ¶66. Petitioner provides no analysis or evidence to support this necessary aspect of its proposed combination. EX2001, ¶66.

Accordingly, Petitioner fails to demonstrate that the proposed combination discloses or would have rendered obvious Claim Elements 21.5 and 22.5, which require correlating two images, where one is a top plan view and one is an oblique perspective view. EX2001, ¶67.

C. The Petition never addresses the "determining pitch" element of independent Claim 22.

Petitioner's challenge to independent Claim 22 immediately fails because Petitioner did not address one of the elements of that claim. Specifically, the Petition does not address the aspect of independent Claim 22 reciting "determining pitch, by the at least one processor of the roof estimation machine, for each one of a plurality of roof sections of the roof based on the image analysis." NEARMAP-1001, 19:32-34. The Petition addresses Claim 22 on pages 52–59. However, the Petition entirely fails to address the element of Claim 22 beginning with "determining pitch." *See*

Petition, 53. Instead, the Petition analyzes Claim Element 22.6 ("performing…image analysis") and then analyzes what Petitioner refers to as Claim Element 22.7 ("generating…a roof report"). Petition, 53. The Petition does not even mention the element reciting "**determining pitch, by the at least one processor of the roof estimation machine, for each one of a plurality of roof sections of the roof based on the image analysis**" that is between Claim Elements 22.6 and 22.7. Accordingly, because the Petition does not identify where the "determining pitch" element of Claim 22 exists in the references, the Petition cannot demonstrate unpatentability regarding independent Claim 22. EX2001, ¶74.

IV. The Petition does not establish that Littleworth and Linder are prior art.

The Petition relies on Littleworth and Linder in an attempt to show obviousness of every challenged claim. But the Petition fails to demonstrate that those references are prior art.

"[A]t the institution stage, the petition must identify, with particularity, evidence sufficient to establish a reasonable likelihood that the reference was publicly accessible before the critical date of the challenged patent and therefore that there is a reasonable likelihood that it qualifies as a printed publication." *Hulu, LLC v. Sound View Innovations*, IPR2018-01039, Paper 29, p. 13. Here, Petitioner has

failed to establish a reasonable likelihood that Littleworth and Linder are prior art to the '961 Patent.

At the outset, the Petition does not provide any analysis whatsoever regarding whether the relied-upon references are prior art. Instead, the Petition simply asserts that Littleworth has a 1997 publication date, that Linder has a 2003 publication date, and that "[a]uthentication and public availability evidence for selected prior art references is included in the Declaration of June Munford. *See* NEARMAP-1019." Petition, 2-3. In other words, Petitioner improperly incorporates the Munford Declaration (NEARMAP-1019) by reference to allegedly provide authentication and public availability evidence for these references. *See* 37 CFR § 42.6(a)(3). However, even if that were permissible, the Munford Declaration is entirely insufficient to establish a reasonable likelihood that Littleworth and Linder were publicly accessible prior to the critical date of the '961 Patent.

A. Littleworth lacks any date or publication information, and the Petition fails to remedy that deficiency.

As an initial matter, Littleworth (NEARMAP-1005) itself does not include any information regarding its publication or a publication date. Instead, Littleworth includes a title ("Three-Dimensional Mapping and As-Built Computer Modelling by Analytical Photogrammetry") and identifies various authors. NEARMAP-1005, 754. Otherwise, Littleworth only includes the substantive text and images of the

paper. Accordingly, there is simply no identifiable information from Littleworth regarding if, when, where, or how it may have ever been published. *See Topcon Medical Systems, Inc. v. Carl Zeiss Meditec, Inc.*, IPR2021-00452, Paper 14 at 11, 16-17 (PTAB July 21, 2021) (denying institution where the version of a research article submitted by a petitioner lacked any publication date, and where the petitioner did not establish that the version submitted with the petition matched the version used to show public availability).

The Munford Declaration states: "I have reviewed Exhibit NEARMAP-1005, 'Three-Dimensional Mapping and As-Built Computer Modelling by Analytical Photogrammetry' by R.M Littleworth, D.M. Stirling and J.H. Chandler as published in *International Archives of Photogrammetry and Remote Sensing: ISPRS 17th Congress, Washington, D.C., 1992, Volume B5*." NEARMAP-1019, [6]. The Munford Declaration then goes on to explain that *International Archives of Photogrammetry and Remote Sensing: ISPRS 17th Congress, Washington, D.C., 1992, Volume B5 ("International Archives of Photogrammetry")* was purportedly available at the Rochester Institute of Technology library in 1997. NEARMAP-1019, [7]-[8]. But, critically, the Munford Declaration never explains the basis for the testimony that Littleworth was part of *International Archives of Photogrammetry*—nor does the Munford Declaration provide any evidence supporting that assumption. NEARMAP-1019, [6].

In other words, the Munford Declaration improperly assumes the basis for its conclusion. The premise of the Munford Declaration is that the Rochester Institute of Technology library had the *International Archives of Photogrammetry* and, thus, that the library therefore had Littleworth. But a MARC record showing a library had the *International Archives of Photogrammetry* is meaningless without a separate finding that that *International Archives of Photogrammetry* actually included what Petitioner submitted as NEARMAP-1005. But, again, Petitioner presents no evidence tying what it submitted as NEARMAP-1005 to the *International Archives of Photogrammetry*. This critical error is sufficient to deny institution. *See Topcon Medical Systems*, IPR2021-00452, Paper 14 at 11, 16-17 (PTAB July 21, 2021) (denying institution where the version of a research article submitted by a petitioner did not match the version asserted to be available before the priority date).

Specifically, the Munford Declaration indicates that Munford reviewed NEARMAP-1005 "as published in *International Archives of Photogrammetry and Remote Sensing: ISPRS 17th Congress, Washington, D.C., 1992, Volume B5*." NEARMAP-1019, [6]. However, as discussed above, Littleworth itself is void of any information regarding publication. Accordingly, it is impossible for Munford to know—based on reviewing only NEARMAP-1005—whether any paper that may have been published in *International Archives of Photogrammetry* is the same as NEARMAP-1005. Munford testifies that "Appendix LITTLEWORTH01 is a true

and correct copy of the MARC record for *International Archives of Photogrammetry and Remote Sensing: ISPRS 17th Congress, Washington, D.C., 1992* as held by the Rochester Institute of Technology library." NEARMAP-1019, [7]. However, there is nothing in the MARC record to indicate that *International Archives of Photogrammetry* included any version of Littleworth, let alone the particular version of Littleworth provided by Petitioner as NEARMAP-1005. For example, the MARC record does not include a table of contents or any other indication of what *International Archives of Photogrammetry* may or may not include. *See* NEARMAP-1019, Appendix LITTLEWORTH01.

Accordingly, the Munford Declaration entirely fails to establish that Littleworth (NEARMAP-1005) was included as part of *International Archives of Photogrammetry* or any other publication before the priority date of the '961 Patent.

B. The particular MARC records submitted by Petitioner do not support Petitioner's theories of accessibility for at least Littleworth and Linder.

For both Littleworth and Linder, the Munford Declaration presents just one theory of accessibility for each reference. For Littleworth, the Munford Declaration relies on a MARC record from the Rochester Institute of Technology library and concludes that "[t]he 008 field of Appendix LITTLEWORTH01 indicates the Rochester Institute of Technology library first acquired these proceedings as of December 8, 1997." NEARMAP-1019, [8]. Similarly, for the Linder reference, the

Munford Declaration relies on a MARC record from the Penn State University library and concludes that "[t]he 008 field of Appendix LINDER01 indicates Penn State University library first acquired this book as of March 10, 2003." NEARMAP-1019, [14]. Each theory is presented visually in the chart below:

Reference	Evidence	Theory of Accessibility
Littleworth	MARC record from Rochester Institute of Technology library (LITTLEWORTH01)	Rochester Institute of Technology library as of December 8, 1997
Linder	MARC record from Penn State University library (LINDER01)	Penn State University library as of March 10, 2003

The premise of the Munford Declaration is that field 008 of each MARC record represents the date that each library acquired the reference. This is because, as the Munford Declaration explains, "the 008 field of the MARC record is reserved for denoting the *date of creation of the library record itself*." NEARMAP-1019, [4]-[5] (emphasis added).

The critical flaw in Munford's theory, however, is that other information on the face of these particular MARC records—the content in field 040 of each record—undermines the conclusions in the Munford Declaration by demonstrating that these two MARC records were likely *not* created by the libraries Munford identifies.

Field 040 in a MARC record represents the "MARC code for or the name of the organization(s) that created the original bibliographic record, assigned MARC content designation and transcribed the record into machine-readable form, or modified (except for the addition of holdings symbols) an existing MARC record." EX2005, 1. Specifically, subfield "$a" of field 040 represents the "[o]riginal cataloging agency," i.e., "*the organization that created the original record*." EX2005, 1 (emphasis added).

Although the Munford Declaration concludes that Penn State University library acquired Linder in 2003 (based on the 008 field in LINDER01) (*see* NEARMAP-1019, [14]), field 040, subfield $a of LINDER01 states that "DLC" created that MARC record. "DLC" refers to the Library of Congress—not Penn State University. EX2006, 1 (MARC organization code search for "dlc"). The various Penn State University libraries have MARC codes beginning with "PSt." EX2007 (MARC organization search for "Pennsylvania State University"). Given that this particular MARC record appears to have been created by the Library of Congress, the date in field 008 (the creation date of the record) does not necessarily reflect when a Penn State University library acquired Linder. Thus, contrary to the sole theory of accessibility in the Munford Declaration, the 008 field in LINDER01 does ***not*** establish that Linder was available at the Penn State University library in 2003.

A similar deficiency exists regarding Littleworth. The only theory of public availability presented in the Munford Declaration is that the Rochester Institute of Technology library acquired Littleworth as of December 8, 1997 (based on the 008 field in LITTLEWORTH01). NEARMAP-1019, [8]. However, the MARC code for the Rochester Institute of Technology library is "NRRI," which does not appear in field 040 of the MARC record relied upon the Munford Declaration. EX2008 (MARC organization search for "rochester institute of technology"); NEARMAP-1019, Appendix LITTLEWORTH01.[6] Given that this particular MARC record appears to have been created by some entity other than the Rochester Institute of Technology library, the date in field 008 (the creation date of the record) does not reflect when Rochester Institute of Technology library acquired Littleworth. Thus, contrary to the sole theory of accessibility presented in the Munford Declaration, the 008 field in LITTLEWORTH01 does ***not*** establish that Littleworth was available at the Rochester Institute of Technology in 1997.

[6] To date, Patent Owner has been unable to determine the organization corresponding to the code "RVE" listed in field 040 of LITTLEWORTH01. However, the burden of proving public availability falls on Petitioner, so any ambiguity regarding these critical MARC fields should have been addressed by Petitioner.

Accordingly, because Petitioner has failed to present credible evidence supporting the only theories of public accessibility offered regarding these references, Petitioner has failed to establish that these references qualify as prior art. Thus, the Board should deny institution.

V. The Board should deny institution under the *Fintiv* framework.

Patent Owner asserted the '961 Patent, as well as seven other patents, against Petitioner in *Eagle View Technologies, Inc. and Pictometry International Corp. v. Nearmap US, Inc.*, No. 2:21-cv-00283 (D. Utah) ("the Utah litigation"). EX2003 (Complaint). As discussed below, the Board should exercise its discretion in view of *Fintiv* to deny institution under 35 U.S.C. § 314(a). *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5-6 (PTAB Mar. 20, 2021) ("*Fintiv*").

A. Factor 1 Favors Denial (Likelihood of a Stay)

Fintiv factor 1 favors denial because Petitioner has not requested a stay in the district court proceeding, and the deadline to do so under the Local Patent Rules of the District of Utah has now passed. According to the Amended Patent Case Scheduling Order ("Scheduling Order") in the Utah litigation, the last day to seek a stay was August 11, 2022. EX2004, 4. The local rule referenced in the Scheduling Order regarding this deadline ("LPR 3.5") confirms that this deadline includes stays based on "other post-grant proceedings" in addition to reexaminations. *See*

EX2009, 15.[7]

Thus, because a stay of the Utah litigation is now highly unlikely, if the Board were to institute this proceeding, both this Board and the district court would be addressing validity of the '961 Patent. This wasteful overlap favors a denial of institution here.

B. Factor 2 is Neutral (Timing of Trial)

Fintiv factor 2 is neutral as Petitioner admits that "any comparison of a projected FWD date against potential trial dates is, at best, speculative." Petition, 64. And, even if the Board does issue a final written decision before the district court proceeding concludes, the ongoing district court proceeding still impacts the efficiency concerns addressed in the *Fintiv* framework. *Fintiv* at 9 ("If the court's trial date is…***significantly after*** the projected statutory deadline, the decision whether to institute will ***likely implicate other factors***…such as the resources that have been invested in the parallel proceeding.").

[7] Although LPR 3.5 bases the stay deadline on service of the Final Non-infringement Contentions, which are presently due September 30, 2022 (EX2004, 2), the Scheduling Order specific to the Utah litigation sets that deadline earlier, on August 11, 2022, as noted above. EX2004, 4. Regardless, however, both deadlines will have passed by the time of any Institution Decision in this proceeding.

C. Factor 3 Favors Denial (Investment in Parallel Proceeding)

Factor 3 weighs in favor of denial because the parties will have invested significantly in the district court proceeding before the institution decision. The Board is projected to issue its institution decision by December 16, 2022. Before that date, Patent Owner will have served Final Infringement Contentions on August 29, 2022, and Petitioner will have served Final Invalidity Contentions on September 16, 2022 and Final Non-Infringement Contentions on September 30, 2022. *See* EX2004, 1-2. That is, Patent Owner and Petitioner will have invested significantly in the merits of the invalidity positions prior to the institution decision. *See Sand Revolution II, LLC v. Cont'l Intermodal Grp.–Trucking LLC*, IPR2019-01393, Paper 24 at 10 (PTAB June 16, 2020) (the Board emphasizing that the focus of factor 3 is on the amount invested "in the merits of the invalidity positions"). Accordingly, by the time the Board issues its institution decision, the parties will have invested significantly in the invalidity positions in the district court proceeding, thereby weighing in favor of denial.

D. Factor 4 Favors Denial (Overlap of Issues)

Factor 4 weighs in favor of denial, because Petitioner has not foreclosed the likelihood of having duplicative invalidity positions. Specifically, Petitioner has made no stipulation to avoid overlapping invalidity grounds presented in the district court proceeding and the Petition. Thus, the potential for overlap of issues favors

denial.

E. Factor 5 Favors Denial (Overlapping Parties)

Factor 5 weighs in favor of discretionary denial because the same parties are involved in both proceedings.

F. Factor 6 Favors Denial (Other Circumstances)

Factor 6 weighs in favor of denial because the Petition fails to present a compelling case of unpatentability. Instead, as demonstrated above, Petitioner has failed to meet its burden with respect to multiple limitations of every challenged claim.

Accordingly, a holistic analysis of the *Fintiv* factors shows that the *Fintiv* factors weigh in favor of discretionary denial.

VI. Conclusion

The Board should deny institution of the Petition for the reasons presented above.

Respectfully submitted,

Dated: September 16, 2022

/Kyle L. Howard/
Kyle L. Howard
Registration No. 67,568
Lead Counsel for Patent Owner

VII. Certificate of Word Count

Under 37 C.F.R. § 42.24(b)(1), the undersigned attorney for the Patent Owner declares that the argument section of this Patent Owner's Preliminary Response (Sections I-VI) has 7,967 words, according to the word count tool in Microsoft Word™.

/Kyle L. Howard/
Kyle L. Howard
Registration No. 67,568
Lead Counsel for Patent Owner

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Eagle View Technologies, Inc., Patent Owner	§	Patent Owner's Preliminary Response
	§	
	§	U.S. Patent No. 8,670,961
	§	

CERTIFICATE OF SERVICE

The undersigned certifies, under 37 C.F.R. §§ 42.105 and 42.6, that service was made on Petitioners' counsel as detailed below.

Date of service	September 16, 2022
Manner of service	Electronic Service: IPR53317-0006IP1@fr.com; PTABInbound@fr.com; axf-ptab@fr.com; tar@fr.com; dsmith@fr.com; klima@fr.com; darno@fr.com
Documents served	Patent Owner's Preliminary Response, including Exhibit List; Exhibits 2001-2009
Persons served	W. Karl Renner Thomas Rozylowicz Daniel D. Smith W. Ryan Klima Patrick Darno Fish & Richardson P.C. 3200 RBC Plaza 60 South Sixth Street Minneapolis, MN 55402

/Kyle L. Howard/
Kyle L. Howard
Registration No. 67,568
Lead Counsel for Patent Owner