

Nearmap US, Inc.
Petitioner

v.

Eagle View Technologies, Inc.
Patent Owner

IPR2022-00734 (U.S. Patent No. 9,135,737)

Patent Owner's Demonstratives

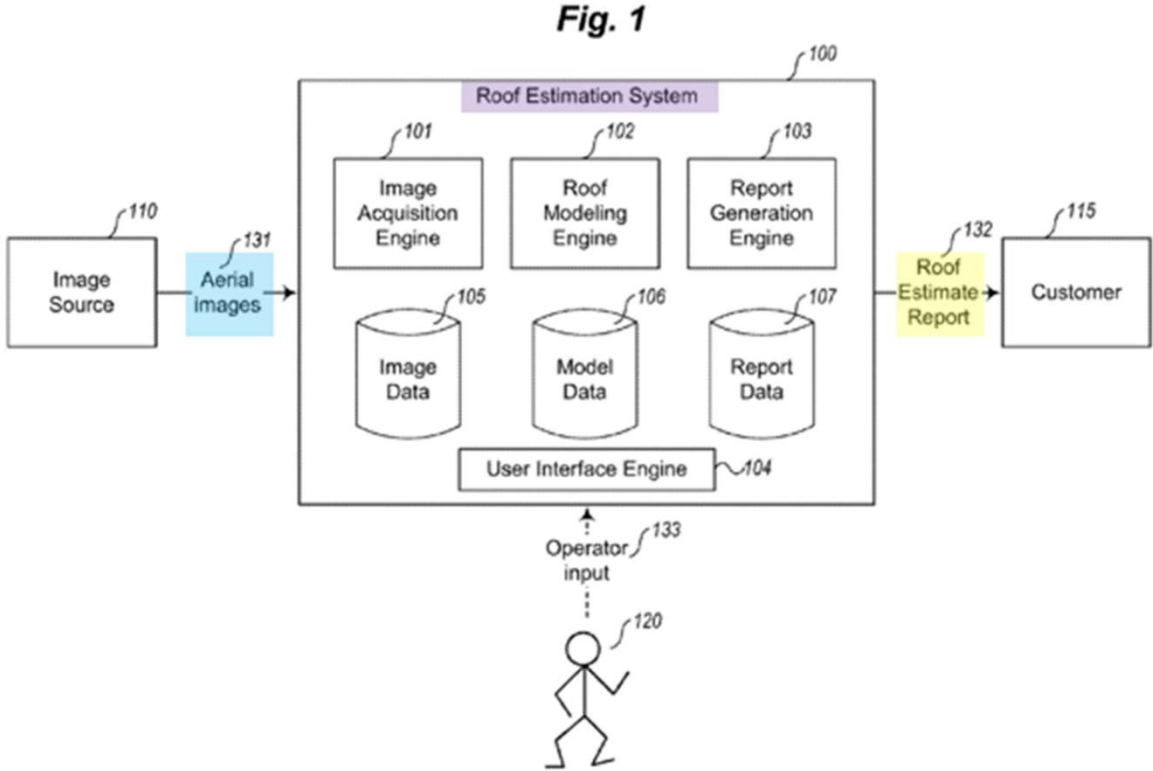
Haynes and Boone, LLP
August 8, 2023

Nearmap US, Inc. v.
Eagle View Technologies, Inc. – EX2041

Summary of Issues

- 1 Overview of the '737 Patent
- 2 Construction of Limitation [1.5]
- 3 Ground 1 fails to teach limitation [1.5]
- 4 Ground 2 fails to teach limitation [1.5]
- 5 The Petition is deficient for independent claims 16 and 26
- 6 Ground 1 fails for claims 9 and 10
- 7 Decisive evidence of secondary considerations of non-obviousness

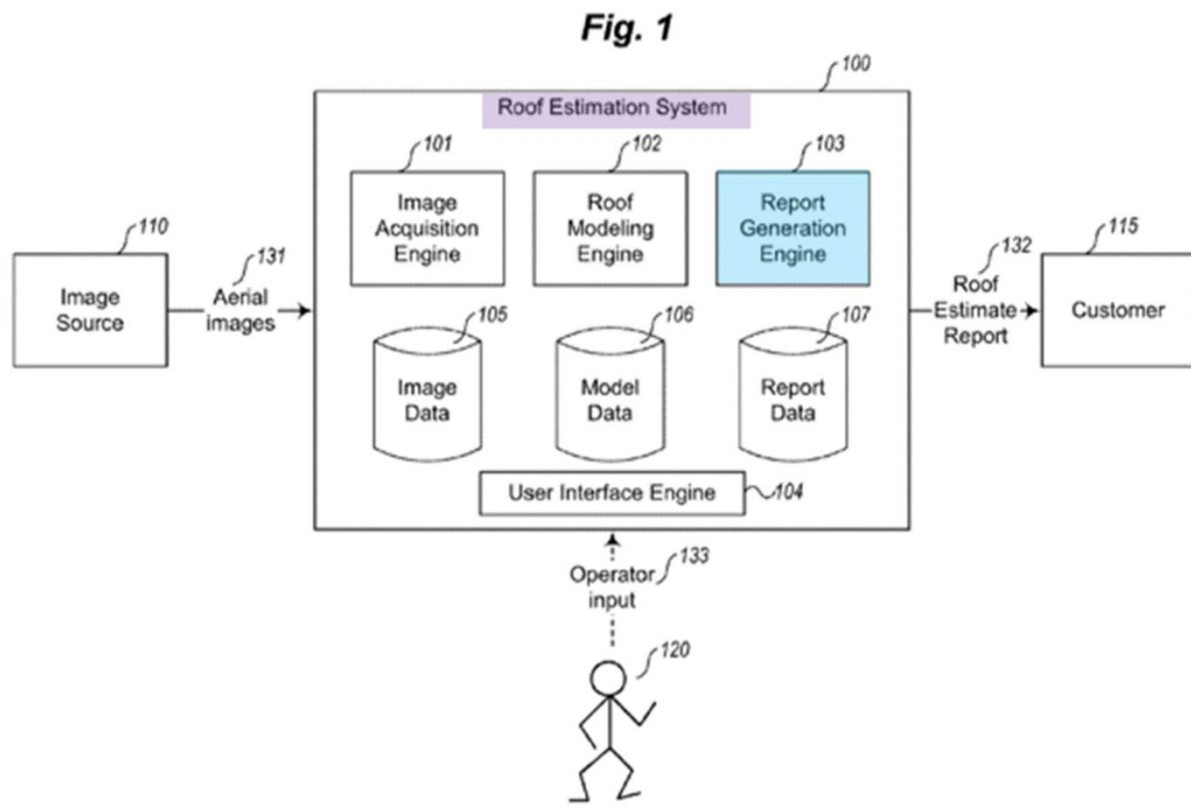
Background on '737 Patent – Roof Estimate Report System



EX1001, Fig. 1 (annotated)

EX1001, 3:40-55, 1:7-11, Fig. 1; POR, 3-4.

Background on '737 Patent – Report Generation Engine



EX1001, Fig. 1 (annotated)

EX1001, Fig. 1, 3:40-46, 6:28-39, 1:55-64, Fig. 8, 15:57-16:36; POR, 9-10; EX2032, ¶¶35.

Background on '737 Patent – Roof Estimate Report

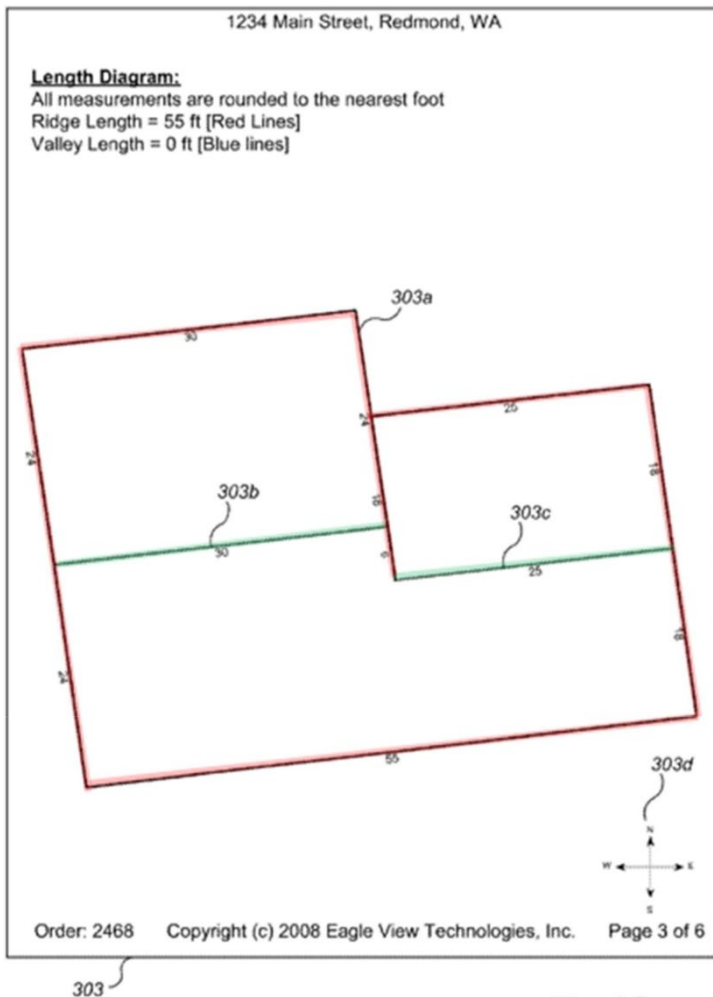


Fig. 3C

EX1001, Fig. 3C (annotated)

Generated roof estimate report includes roof measurement information for repair and/or constructing the roof structure of the building, e.g.:

- **Line drawing 303a** of roof structure
- **Ridge lines 303b, 303c**
- **Dimensions of roof sections**

Claim 1 of '737 Patent

1. A computer-implemented method in a roof estimate report system including at least one processor and a memory coupled to the at least one processor, the method comprising:
- [1.0] displaying, by the at least one processor of the roof estimate report system, a plurality of aerial images of a roof at the same time, each of the aerial images providing a different view, taken from a different angle of the same roof;
 - [1.1] displaying, by the at least one processor of the roof estimate report system, respective line drawings representing features of the roof, the respective line drawings overlying a first and a second aerial image of the plurality of aerial images of the roof, the line drawing overlying the first aerial image of the roof having features in common with the line drawing overlying the second aerial image of the roof;
 - [1.2] in response to user input, changing, by the at least one processor of the roof estimate report system, the line drawing representing a feature of the roof that overlies the first aerial image of the roof;
 - [1.3] in response to the changing, making corresponding changes, by the at least one processor of the roof estimate report system, to the line drawing overlying the second aerial image; and
 - [1.4] generating and outputting a roof estimate report using a report generation engine, wherein the roof estimate report includes numerical values for corresponding slope, area, or lengths of edges of at least some of a plurality of planar roof sections of the roof, wherein the generated roof estimate report is provided for repair and/or constructing the roof structure of the building.

- ❖ Petitioner's Ground 1 (Heller+Quam) does not teach [1.5].
- ❖ Petitioner's Ground 2 (Heller+Quam+Deaton) does not teach [1.5].
- ❖ Limitations [1.5(a)] & [1.5(b)] are entitled to patentable weight.
- ❖ Independent claims 16 and 26 recite similar features:
 - [16.3]
 - [26.3]

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Petitioner's Proposed Construction of [1.5] is Wrong

Petitioner's argument that the entirety of limitation [1.5] lacks patentable weight is incorrect.

Independent claims 1, 12, 16, and 26 each recite a form of the following limitation:

generating and outputting a roof estimate report using a report generation engine, wherein the roof estimate report includes numerical values for corresponding slope, area, or lengths of edges of at least some of a plurality of planar roof sections of the roof, wherein the generated roof estimate report is provided for repair and/or constructing the roof structure of the building.

NEARMAP-1001, claim 1. These limitations are directed to generating printed matter that has no function or structural relation to the substrate on which it is printed or displayed. Thus, these limitations are entitled to no patentable weight.

Pet., 6

The Board Did Not Decide that the Entirety of [1.5] Lacks Patentable Weight

new and non-obvious relationship with the substrate. Thus, the claimed content of the information is not entitled to weight in the patentability analysis. *See In re Ngai*, 367 F.3d 1336, 1338 (Fed. Cir. 2004); *Ex parte* weight. *See id.* Thus, we are persuaded that the detailed requirements as to the contents of the roof estimate report are not entitled to patentable weight.

EX1010, 18

Limitations [1.5(a)] & [1.5(b)] are not directed to:
(1) “the claimed content of the information,” or
(2) “the detailed requirements as to the contents of the roof estimate report.”

[1.5]

(a) generating and outputting a roof estimate report using a report generation engine, wherein the roof estimate report includes numerical values for corresponding slope, area, or lengths of edges of at least some of a plurality of planar roof sections of the roof, wherein the
(b) generated roof estimate report is provided for repair and/or constructing the roof structure of the building.

Petitioner's Improper New Claim Construction Argument

The Board should disregard Petitioner's improper new claim construction argument for limitation [1.5(b)].

NEARMAP-1010, 18. EagleView does not indicate “feature (b)” recites anything more than an intended use of the report reflected by roof measurement *content*.

NEARMAP-1041, ¶11. Thus, applying the Board's prior analysis, “feature (b)”

Reply, 3

This argument was never raised or even suggested in the Petition, and is not responsive to any argument in Patent Owner's Response.

Collateral Estoppel Does Not Apply to the Board's Prior Decision

Collateral estoppel does not apply because:

- The Xactware IPR did not necessarily require determination of the identical issue.
- In the Xactware IPR, the Board did not necessarily require determination of whether portions of limitations [1.5], [16.3], and [26.3] are entitled to patentable weight.
- The Board found the claims patentable based on “decisive” evidence of non-obviousness despite finding that a portion of limitations [1.5], [16.3], and [26.3] is not entitled to patentable weight.
- Claims not construed in Xactware IPR:

We conclude **no express claim constructions are necessary** to resolve whether Petitioner has shown by a preponderance of the evidence that claims 1, 9, 10, 16, 19, 22, 25–28, 31, and 34–36 are unpatentable. *See Vivid*

EX1010, 6

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Ground 1 Does Not Render Obvious Limitation [1.5]

Ground 1 is based on Petitioner’s erroneous construction that the entirety of limitation [1.5] is not entitled to patentable weight.

Petitioner’s Ground 1 analysis of [1.5]:

Since the specific information content of the report described in the claim is not limiting, it follows that a showing of “generating and displaying any graphical or textual information” is sufficient to meet the claim. *Id.*, 18. Pet., 34

Petitioner’s Ground 1 analysis of [1.5] does not address [1.5(a)] or [1.5(b)]:

[1.5]
(a)

generating and outputting a roof estimate report using a report generation engine, wherein the roof estimate report includes numerical values for corresponding slope, area, or lengths of edges of at least some of a plurality of planar roof sections of the roof, wherein the

(b)

generated roof estimate report is provided for repair and/or constructing the roof structure of the building.

The Heller-Quam Combination Does Not Teach [1.5(a)] or [1.5(b)]

Heller and Quam are directed to creating a 3D model of the basic geometry of the site under examination, not generating and outputting a roof estimate report.

Heller Abstract

The central component in the RADIUS model-supported image exploitation paradigm, is the creation of a 3-dimensional model that captures the basic geometry of the site under examination. While many fully automated methods for site model construction show promising results, none are robust or general enough to replace interactive and semi-automatic techniques. In this paper, we outline the suite of site-model construction tools being assembled for the RADIUS program, a sample scenario for their use, and the results of a study to characterize the potential saving of effort they offer.

1 Introduction

The construction and use of 3-D models of military and industrial sites will allow revolutionary advances in the speed, confidence, and range of analytical techniques with which an image analyst develops and reports intelligence information.

The central component of this *model-supported image exploitation* paradigm, is the creation of a 3-dimensional model that captures the basic geometry of the site under examination. As part of the RA-

Quam

1 Introduction

The RCDE contains facilities for CAD-system-like three-dimensional (3-D) modeling, image processing, electronic-light-table image viewing and mensuration, frame and non-frame camera photogrammetry, and photo-realistic rendering.

The cartographic features and data that can be entered include multiple images, camera models, digital terrain elevation data, point, line, and area cartographic features, and a wide assortment of 3-D objects. Interactive capabilities include free-hand feature entry, altering features while constraining them to conform to the terrain and lighting geometry, adjustment of feature parameters, and the adjustment of the camera model to display the scene features from arbitrary viewpoints.

Petitioner's New Reply Argument is Improper and Wrong

Petitioner's new Reply argument:

Heller/Quam discloses generating and outputting particular roof data in graphical and textual form through Quam's description of its RCDE system. Pet., 33-34;

* * * *

information associated with "ContourMap," "MapGrid," and "Text"). Through these teachings, a POSITA would have understood that the combined system generates and outputs a roof estimate report, and this is done using a report generating engine (e.g., software components of the RCDE involved in generating and outputting the report). NEARMAP-1041, ¶18. Under the Board's prior

Reply, 6

- These are improper, new arguments that were never raised in the Petition.
- Quam's "roof data" is not generated and output by a report generation engine, as recited in [1.5(a)].

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Ground 2 Fails to Teach Limitation [1.5(a)]

Petitioner:

entitled to patentable weight.” NEARMAP-1010 (’592 FWD), 18. However, to the extent this limitation is found to be entitled to patentable weight, it is nonetheless rendered obvious by the Heller-Quam-Deaton combination.

Pet., 53

Petitioner’s Ground 2 does not show that Deaton teaches limitation [1.5(a)]:

- [1.5]
(a) generating and outputting a roof estimate report using a report generation engine, wherein the roof estimate report includes numerical values for corresponding slope, area, or lengths of edges of at least some of a plurality of planar roof sections of the roof, wherein the generated roof estimate report is provided for repair and/or constructing the roof structure of the building.

Ground 2 Fails to Teach Limitation [1.5(a)]

Petitioner's Ground 2 argument:

In the combination, Deaton describes “a roof inspection system” that generates and outputs various reports. NEARMAP-1006, [0010]. For example, Pet., 53

Deaton's ¶ 10 does not disclose any reports. Rather, it's directed to collecting “roof inspection information” at the physical site of a roof structure.

[0010] Another embodiment of a roof inspection system may include a portable computing device that can be transported between a first location and a second location, the second location being remote from the first location. The portable computing device includes at least one auxiliary component for collecting roof inspection information at the second remote location according to an inspection plan executed by the portable computing device. The roof inspection information collected by at least one auxiliary component includes geographic positions defining a geometric shape of at least a portion of the roof and a geographic position of at least one component associated with the roof with respect to the portion of the roof. The portable com-

Ground 2 Fails to Teach Limitation [1.5(a)]

Deaton's "project report" cannot correspond to the claimed "roof estimate report" because Deaton does not teach that the "project report" is "generat[ed] and output[ed]...using a report generation engine," as recited in [1.5(a)].

[0107] A project report provides specification details and work items for repairing or replacing the infrastructure in accordance with the conditions identified in the assessment report. The project report links the inspection data to either generic or specific manufacturer products and prices. For example, if the user generates a report directed to repairing the deficiencies in an infrastructure item, the user selects each deficiency and chooses a desired product from a predefined list of manufacturer products that resolve the deficiency. Similarly, in the case of replacement of an infrastructure item, data reporting module 906 may use the inspection data to provide the user with a predefined list of manufacturer's products that may be used for replacement. The user selects a desired product from the list and assigns a quantity to that product. Quantities could, for example,

There is Insufficient Motivation to Combine Deaton with Heller-Quam

Petitioner:

In the combination, the combined system of Heller and Quam is modified to produce a roof estimate report, as taught by Deaton, based on the site models described in Heller and Quam. NEARMAP-1003, [94].

Pet., 50

This proposed combination is not supportable because:

- Heller and Quam are directed to creating 3D models.
- Neither Heller nor Quam generates or outputs a roof estimate report based on their 3D models.
- Deaton is directed to collecting “roof measurement information” based on the physical inspection of a roof on-site.
- There is no teaching in Heller or Quam of being able to incorporate “roof inspection information” from a physical, on-site inspection.

Deaton Does Not Support Petitioner's Proposed Modification

Petitioner:

based on image analysis, a POSITA would understand that Deaton's techniques for generating a roof estimate report based on a three-dimensional model would operate in the same manner regardless of how the particular three-dimensional model was originally generated. NEARMAP-1003, [102].

Pet., 53-54

Deaton's "project report" is created from the physical inspection of a roof on-site, not from 3D models.

Deaton

[0107] A project report provides specification details and work items for repairing or replacing the infrastructure in accordance with the conditions identified in the assessment report. The project report links the inspection data to either

[0106] An assessment report may include a summary of the inspected infrastructure and a listing of the deficiencies identified during inspection data collection. Such a report

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The Petition Does Not Address Unique Limitations of Claims 16 and 26

The Petition relies exclusively on the analysis of claim 1 for claims 16 and 26.

The Petition's analysis does not address unique limitations of claims 16 and 26.

16. A non-transitory computer-readable storage medium, having computer executable instructions stored thereon that, when executed by at least one computer processor, cause the at least one processor to enable a computing system to generate a roof estimate report for a building having a roof, by performing a method comprising:

overlaying a line drawing on corresponding locations of a roof feature of the roof on first and second aerial images of the roof, wherein the first aerial image provides a first view of the roof of the building and the second aerial image provides a second view of the roof of the building; in response to changes in the line drawing overlaid on the first aerial image, displaying corresponding changes to the line drawing overlaid on the second aerial image; and generate and output a roof estimate report using a report generation engine, wherein the roof estimate report includes numerical values for corresponding slope, area, or lengths of edges of at least some of a plurality of planar roof sections of the roof, wherein the generated roof estimate report is provided for repair and/or constructing the roof structure of the building.

26. A computer-implemented method in a roof estimate report system including a computer system and a memory coupled to the computer system, the method comprising:

changing, by the computer system of the roof estimate report system, a line in a first line drawing representing a feature of a roof that overlies a first aerial image of the roof;

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; and

generating and outputting a roof estimate report using a report generation engine, wherein the roof estimate report includes numerical values for corresponding slope, area, or lengths of edges of at least some of a plurality of planar roof sections of the roof, wherein the generated roof estimate report is provided for repair and/or constructing the roof structure of the building.

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Petitioner's Construction of Claim 9 is Wrong

Claim 9 should be construed as transmitting the roof measurement information outside the roof estimate report system, e.g., to “third-party systems that generate roof estimate reports based on the provided information.”

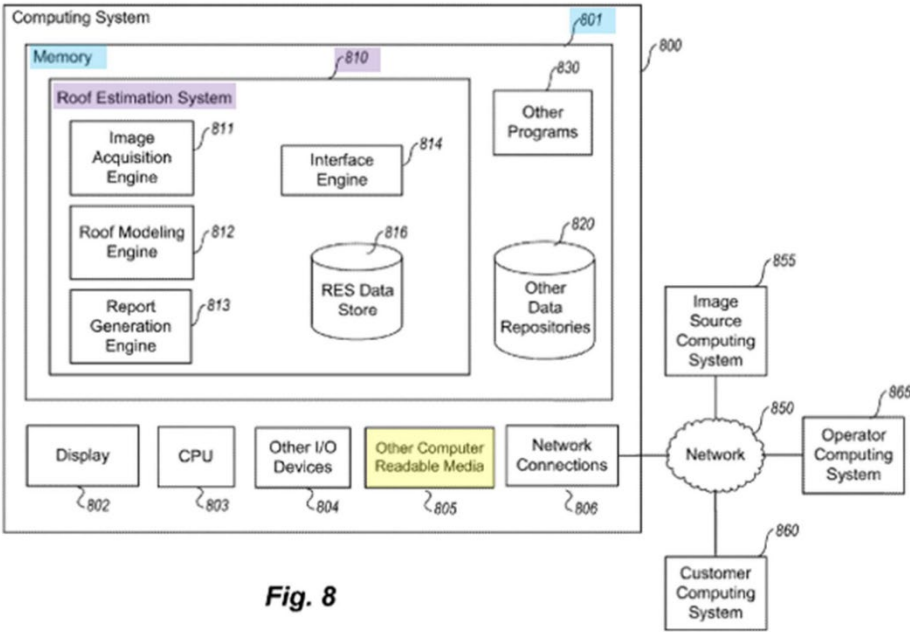


Fig. 8

EX1001, Fig. 8 (annotated)

readable media 805, and network connections 806. The RES 810 is shown residing in memory 801. In other embodiments, some portion of the contents, some of, or all of the components of the RES 810 may be stored on and/or transmitted over the other computer-readable media 805. The compo-

EX1001, 16:13-17.

Heller-Quam Does Not Teach Claim 9

Petitioner theorizes that changing the size of a line drawing or adjusting the slope of a roof in Heller-Quam would correspond to “roof measurement information.”

Petitioner is wrong because:

- There’s no teaching in Heller or Quam that links a line drawing or mouse movements to a measurement (or reference) scale.

Abstract

The central component in the RADIUS model-supported image exploitation paradigm, is the creation of a 3-dimensional model that captures the basic geometry of the site under examination. While many fully automated methods for site model construction show promising results, none are robust or general enough to replace interactive and semi-automatic techniques. In this paper, we outline the suite of site-model construction tools being assembled for the RADIUS program, a sample scenario for their use, and the results of a study to characterize the potential saving of effort they offer.

EX1004, Heller

9. The method of claim 1 further comprising:
transmitting roof measurement information based at least in part on the change of the line drawing representing a feature of the roof that overlies the first aerial image of the roof.

EX1001, claim 9

Heller-Quam Does Not Teach Claim 10

Quam does not teach [10.2]:

registering, based on the received indication of the point,
the aerial image to a reference grid corresponding to a
three-dimensional model of the roof.

Petitioner's argument:

Also in the combination, Quam teaches that RADIUS provides for
*“[r]egistration of multiple data sources, including stereographic or multiple
images, terrain elevation models, and 3-D object models, to the same world
coordinate system.”* NEARMAP-1005, 5. A POSITA would have understood the
“world coordinate system” described in Quam to be a “reference grid.”

Pet., 43-44

Petitioner has not shown that Quam's “world coordinate system” is a reference grid
corresponding to a 3D model of a roof, as required by [10.2].

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Extensive and Compelling Evidence of Non-Obviousness

Patent Owner's secondary considerations evidence further illustrate non-obviousness of claims.

- Evidence shows both commercial success of and industry praise for Twister and Render House products that embody the challenged claims.
- Same extensive evidence of nexus presented in this IPR as was presented in Xactware IPR.
 - In Xactware IPR, the Board found Patent Owner presented “extensive evidence” that Twister and Render House are coextensive with claims, and secondary considerations evidence confirmed non-obviousness of claims.
 - Federal Circuit affirmed Board's finding of non-obviousness based on secondary considerations evidence.
- Dr. Bajaj submitted claim charts showing how each challenged claim is embodied by Twister and Render House products. EX2032, ¶179 (pp. 113-173); POR, 38-57.

There is a Presumption of Nexus

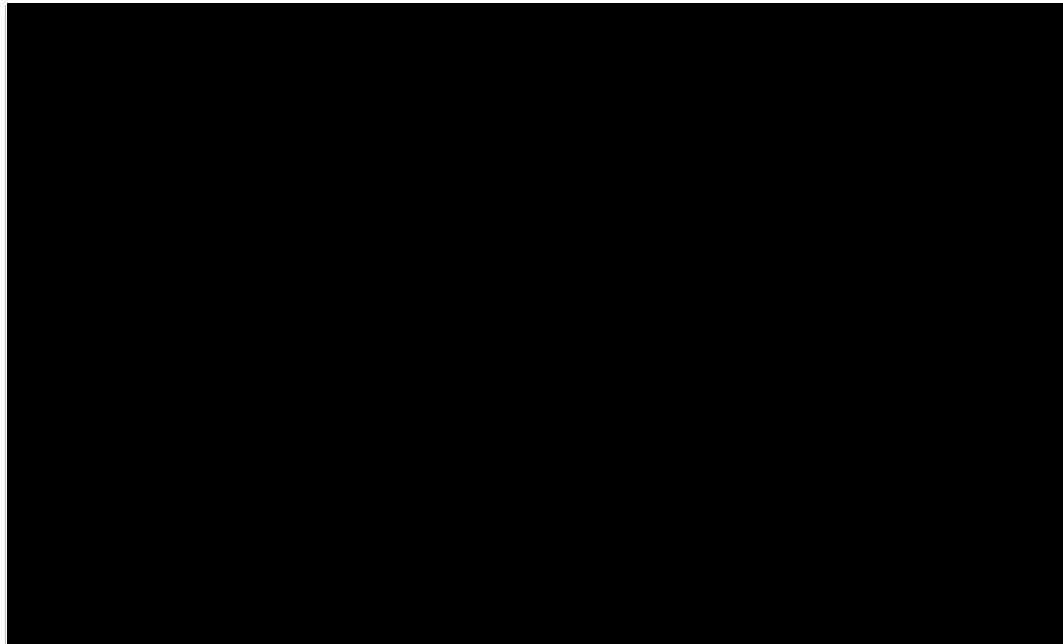
Patent Owner is entitled to a presumption of nexus.

- Patent Owner's Twister and Render House products are the invention claimed in the '737 patent.
- Patent Owner has shown that that these products are “essentially the claimed invention,” by showing that Twister and Render House embody the challenged claims. EX2032, ¶179 (pp. 113-173); POR, 38-57.
 - Petitioner does not contest that Twister and Render House embody challenged claims other than dependent claim 9.
- “[P]resuming nexus is appropriate when the patentee shows that the asserted objective evidence is tied to a specific product and that product embodies the claimed features, and is coextensive with them.” *Fox Factory, Inc. v. SRAM, LLC*, 944 Fed. Cir. 1366, 1373 (Fed. Cir. 2019).
- Petitioner has not rebutted strong showing of presumption of nexus.

Patent Owner Has Proven a Nexus with Commercial Success Evidence

Patent Owner's commercial success is the direct result of sales of roof estimate reports generated with Twister and Render House.

- Exponential revenue growth of more than [REDACTED] from [REDACTED] to [REDACTED] from sales of reports using Twister and Render House.
- Chris Johnson Declaration (EX2011): revenue data reflects sales of reports.



Patent Owner Has Proven a Nexus with Industry Praise Evidence

Industry praise is the direct result of roof estimate reports generated with Twister and Render House.

EagleView invented the concept of 3D aerial roof measurements and has quickly become the industry standard in both the roofing and insurance industries. EagleView reports provide the most accurate measurements in the industry due to their ability to create 3D images and then extract the important measurements from the 3D diagram. The patent-pending software and process has been tested by major insurance carriers and roofing contractors for accuracy thousands of times with great success.

EX1026, 1

*“EagleView gives us
consistent, accurate
measurements
every time.”*

— Dan Molnar, Phoenix Roofing

EX1028

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