

NOT FOR PUBLICATION

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY
CAMDEN VICINAGE

_____	:	
Eagle View Technologies, Inc. <i>et al.</i> ,	:	
	:	Civil No. 15-07025 (RBK/JS)
Plaintiffs,	:	Markman Order
v.	:	
Xactware Solutions, Inc. <i>et al.</i> ,	:	
	:	
Defendants.	:	
_____	:	

KUGLER, United States District Judge:

This Matter comes before the Court on cross-motions for claim construction by Eagle View Technologies, Inc., *et al.* (Plaintiffs) and by Xactware Solutions, Inc. *et al.* (Defendants) of asserted claims of the seven U.S. Patents, ("patents at issue"), listed in Table 1 in the corresponding Opinion, and each assigned to Eagle View Technologies. The asserted claims and disputed claim terms are listed in Table 2 in the corresponding Opinion.

The Court having reviewed the papers submitted and having held a hearing on 12 October 2017 and for the reasons set forth in the Opinion issued today, it is hereby **ORDERED** that:

the plain and ordinary meaning of each disputed claim term is clear to one of skill in the art and needs no claim construction; and
therefore, no claim construction has been set forth herein.

Dated: 5 December 2017

s/ Robert B. Kugler
ROBERT B. KUGLER

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY
CAMDEN VICINAGE**

Eagle View Technologies, Inc. *et al.*,
v.
Xactware Solutions, Inc. *et al.*,

Plaintiffs,
Defendants.

Civil No. 15-07025 (RBK/JS)
Markman Opinion

On 12 October 2017, the Court held a *Markman* hearing,¹ at which, and in their briefing prior to the hearing, the parties presented proposed constructions of disputed claim terms in the seven patents at issue listed below in Table 1.

Table 1		
Patent Number	Priority Date (PD) / Filing Date (FD)	Claims at Issue: Independent (IND)/ Dependent (DEP)
US8,078,436, re-examined ('436 patent)	PD: 17 April 2007 FD: 16 October 2007	IND: 1, 18 DEP: 2, 5, 8, 21
US8,170,840 ('840 patent)	PD: 31 October 2008 FD: 15 May 2009	IND: (1), 10, 16 DEP: 4 (from 1), 11, 15 (from 10), 18 (from 16)
US8,818,770 ('770 patent)	PD: 31 October 2008 FD: 3 April 2012	IND: (16), 19 DEP: 17 (from 16), 20, 23 (from 19)
US9,129,376 ('376 patent)	PD: 31 October 2008 FD: 31 July 2014	IND: 17, 20 DEP: 19, 21
US8,209,152 ('152 patent)	PD: 31 October 2008 FD: 15 May 2009	IND: DEP: 8 (from 1)
US8,825,454 ('454 patent)	PD: 31 October 2008 FD: 17 May 2012	IND: 26 DEP: 33 (from 26)
US9,135,737	PD: 31 October 2008 FD: 1 Aug 2014	IND: 1 DEP: 8 (from 1), 25 (from 16)

¹ pursuant to *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996).

Plaintiffs assert these terms fall into five categories (Docs. 189 and 267). Defendants assert there are 10 disputed terms (Docs. 186 and 264). See Table 2 below.

For the reasons set forth below, the Court has decided that, for each disputed term, the language of the claims as granted is clear on its face to a person of skill in the art (POSITA) and needs no further construction. The Court has not reviewed undisputed claim terms.

1.0 Background

1.1 Business Relationship

Plaintiffs are the owners of the patents at issue that recite, among other things, business methods, systems, and computer readable storage media for providing a roof repair estimate. These do so by applying photogrammetric methods, that is, trigonometric calculations, to images of rooves in aerial photographs to compute measurements of those rooves. Plaintiffs believe the patents at issue, as well as other of their patents, fundamentally changed how roofers and insurance companies analyze and estimate roof repair efforts and cost. Doc. 189:5. They see that their application of photogrammetry to aerial images of a roof² creates a novel and non-obvious business method that results in cheaper, more accurate, safer, and speedier repair reports, as it precludes the need for humans' climbing the roof.

Defendant Xactware Solutions, Inc., is a subsidiary of Verisk Analytics, and provides online technology tools and systems to insurance carriers, remodelers and construction service providers for determining replacement-cost calculations for damaged buildings and construction estimates. Defendants and Plaintiffs have had an on-going business relationship in that Defendants have contracted to use Plaintiff's patented inventions in their online solutions. Further, Defendants and Plaintiffs had begun negotiations to have Defendants acquire Plaintiffs' business and patent portfolio until the Federal Trade Commission rejected the merger. The parties have asserted they are competitors to each other (Doc. 15:¶1).

1.2 Procedural History

On 23 September 2015, Plaintiffs filed their original complaint against Defendants and on 30 November 2015, an amended complaint, both of which (Docs 1 and 30) allege direct infringement under 35 U.S.C. § 271(a) and indirect infringement under 35 U.S.C. 271(b) of at least one or more claims of each patent at issue above. Specifically, Plaintiffs state that Defendant Xactware made and used rooftop aerial measurement products including, but not limited to Xactware's online software tool, Xactimate®, alone or in combination with another of Xactware's online software tool, Aerial Sketch™, within the United States in a manner that infringes one or more claims of each of the patents listed above.

² Which may be available from Google® images or elsewhere

On 12 November 2015, Defendants answered the complaint and counterclaimed in Doc. 15, asserting no claim of any of Plaintiffs' patents at issue is valid and therefore Defendants' software tools and systems cannot infringe these.

Over the next eighteen months, Defendants also filed in the U.S. Patent and Trademark Office a total of 13 requests for *inter partes* review (IPR) of the patents at issue.³ For almost all IPR requests, the Patent Trial and Appeal Board (PTAB) either denied institution or found the IPR not to demonstrate unpatentability of the relevant claims. Only one IPR, for the '152 patent, resulted in a decision of unpatentability or amendment of some of the claims. See Paper No. 53 of the *Inter Partes* Review IPR2016-00491 on the PTAB's online search site, <https://ptab.uspto.gov/>.

1.3 Brief Description of the Claimed Inventions at Issue

Plaintiff's claimed invention is directed to, among other things, computer-implemented methods and computing systems for generating a roof estimate report. These methods and systems include the generation and transmission of a model--essentially a line drawing--of each section of a roof developed from more than one aerial photograph of the roof, the model being annotated to show slope, area, and length of each roof section. Put simply, the invention is directed to giving insurance carriers and roof repairers a report of measurements of each roof section, in which the measurements have been calculated by triangulating the same points from different aerial views of the roof.

2.0 Issue

At issue here is the construction of the claim terms listed in Table 2 below, which also lists the asserted patents and where the disputed claim terms appear. As mentioned above, Defendants dispute these claim terms and request the Court's construction of them; Plaintiffs urge either no construction, or, if construction is deemed necessary, an alternative differing from Defendants'. In Table 2 below, proposed additions to claims are underlined; proposed deletions are struck out.

³ Each patent was the subject of at least one IPR request.

Table 2: Claim Terms Whose Meaning is Disputed by Defendants and Asserted by Plaintiffs as Needing No Construction

Term in Claim	Asserted Patent Claims Where Term Appears (or Depends From)	Defendants' Construction	Plaintiffs' Construction
<p>"correlate / correlating the first aerial image with the second aerial image". From Claim 1</p>	<p>'436 Patent as Reexamined: Claims 1,2, 5, 8, 18, 21</p>	<p>For each reference point on an object, <u>registering a pair of points</u> that includes a first point identified in the first aerial image and a second point identified in the second aerial image</p>	<p>No Construction Needed:</p>
<p>Pitch Determination Marker::</p> <p>"a pitch determination marker that is an interactive user interface control that can be manipulated by the operator in order to specify pitch of the roof structure of the building". From '840, col. 12: 45-48.</p> <p>"envelope tool"</p> <p>"a second type of pitch determination marker...(also called an "envelope tool") that includes surfaces 520a and 520b" From '840, col. 13: 6-13</p>	<p>'840 Patent: Claims 4,10,11, 15, 16, 18; '376 Patent: Clm 17, 19,20, 23</p> <p>'376 Patent: Claims 22-23</p>	<p>A graphical user interface component, <u>distinct from the display model of the roof</u>, that can be manipulated by a user to specify the pitch of a section of the roof <u>model</u></p> <p>A graphical user interface component, <u>distinct from the display model of the roof</u>, that can be manipulated by a user to specify the pitch of a section of the roof <u>model</u>, and which includes two surfaces joined at a common edge</p>	<p>No Construction Needed OR</p> <p>A graphical user interface component that can be manipulated by a user to specify the pitch of a section of a roof</p> <p>A graphical user interface component that can be manipulated by a user to specify the pitch of a section of a roof and which includes two surfaces joined at a common tool</p>

<p>"First and Second Visual Marker" terms, including:</p> <p>First Visual Marker: "displaying...a graphical user interface including a first aerial image of a roof structure of a building and also at least one visual marker that is moveable by a user in a same display window...</p> <p>Second Visual Marker: "displaying a location of a second visual marker on the roof structure of the building in the second aerial image of the roof structure"</p>	<p>'770 Patent: Claims 12 (depending on claim 1)</p>	<p>A first graphical user interface component, <u>distinct from a displayed model of a roof</u>, that can be manipulated by a user to specify roof points on a first aerial image.</p> <p>A second graphical user interface component, <u>distinct from both the first visual marker and a displayed model of a roof</u>, that can be manipulated by a user to specify roof points on a first aerial image</p>	<p>No Construction Needed OR</p> <p>A first graphical user interface component that can be manipulated by a user to specify roof points on a first aerial image.</p> <p>A second graphical user interface component used to specify roof points on a second aerial image</p>
<p>"Second Line Drawing" terms:</p> <p>"displaying ... a second line drawing representing features of the roof ..."</p> <p>"in response to the changing, making corresponding changes...to the line drawing overlying the second aerial image"</p>	<p>'454 Patent: Claims 26, 33</p> <p>'737 Patent: Clm 8 (depending on claim 1), 25 (depending on claim 16)</p>	<p>displaying ... a second line drawing <u>that is distinct from the first line drawing and is displayed on a second aerial image</u> representing features of the roof</p> <p>in response to the changing, making corresponding changes...to the line drawing overlying the second aerial image <u>that is distinct from the first line drawing and is displayed on a second aerial image</u></p>	<p>No Construction Needed OR Retain "Second line drawing" as is</p> <p>No Construction Needed OR</p>

<p>“Responsive Changes” terms: “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 the corresponding locations of the feature on the first and second aerial images ”</p>	<p>'152 Patent: Claim 8 (depending on Claim 1)</p>	<p>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 the corresponding locations of the feature on the first and second aerial images <u>so that the feature is displayed on the second aerial image as the user indicates the feature on the first aerial image</u></p>	<p>No Construction Needed</p>
<p>“changing. . . 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 line drawing being made by the computer system in response to the change that was made by the user in the first line drawing”</p>	<p>'454 Patent: Claims 26, 33</p>	<p>changing. . . 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 line drawing being made by the computer system in response to the change that was made by the user in the first line drawing <u>so that the computer system simultaneously displays the changes in both the first line drawing and the second line drawing</u></p>	<p>No Construction Needed OR Retain Claim Language as is</p>
<p>“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”</p>	<p>'737 Patent: Claims 1 and 8, 25 (Claim 26 language shown here)</p>	<p>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 <u>so that the computer system displays the changes in the second line drawing as the user changes the feature on the first line drawing.</u></p>	<p>No Construction Needed or An Alternative Construction Not Listed Here</p>

3.0 Legal Standards

When a district court construes disputed patent claim terms, it's fulfilling the Supreme Court's directive in *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996) which is that courts, not juries, determine claim scope. Fundamental principles of claim construction include: courts give claim terms "their ordinary and customary meaning." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (citing *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576 (Fed. Cir. 1996) [other internal quotations omitted]) by reference to how a person of ordinary skill in the art ("POSITA") understands the terms at the time the application was filed. *Id.* at 1313. Courts do not analyze the meaning of claim terms in a vacuum, but look first to the intrinsic evidence in the patent itself, which includes the language of the claims, the specification, and the prosecution history. *Id.*; *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1328 (Fed. Cir. 2008).

As for the weight of intrinsic evidence, foremost is the claim language itself, including language from other claims than the one at issue. *Phillips*, 415 F. 3d at 1314; *Semitool, Inc. v. Dynamic Micro Sys. Semiconductor Equip. GmbH*, 444 F.3d 1337, 1346 (Fed. Cir. 2006). When the term is not defined in the claim itself, then the specification—the drawings, the description, and any other filed application part—is the single best guide for mining meaning. *Phillips*, 415 F. 3d at 1313, 1315-16 (quoting *Vitronics*, 90 F. 3d at 1582). The court then relies on the prosecution history of the filed application typically for support, and not definition, of claim term meaning. *Phillips*, 415 F. 3d at 1317.

Upon exhausting the intrinsic evidence, the court may consider extrinsic evidence, which is external to the patent and its prosecution history, such as expert and inventor testimony, dictionaries, and learned treatises (*Id.* at 1317-1318), to make factual findings to support its claim construction. Extrinsic evidence may not be used to contradict intrinsic evidence or the plain meaning of the claim language and is generally less significant than the intrinsic record. *Profectus Technology LLC v. Huawei Technologies Co., Ltd.*, 823 F.3d 1375 (2016).

Moreover, the Supreme Court in *Teva Pharmaceuticals USA v. Sandoz, Inc.*, 574 S.Ct. 831 (2015) held the Federal Circuit must exercise bi-partite review of district court findings in patent cases. Those findings based on intrinsic evidence are regarded as a legal determination, which the Federal Circuit continues to review *de novo*; those findings based on extrinsic evidence are considered factual in nature, which the Federal Circuit is to review for clear error.

4.0 Discussion

As indicated, the court's task is to ascertain the plain meaning of a term as a POSITA would have understood it at the time of patent application filing. The exercise of such jurisprudence, however, has resulted in opaque and uncertain results, as witnessed by the

Federal Circuit's exercise of *de novo* review over the years to overturn claim constructions in a way that has not led to illuminating legal themes. *See, e.g.*, PATENT CLAIM CONSTRUCTION IN THE FEDERAL CIRCUIT §§ 2:26 to 2:33 (Edward Manzo, editor in chief, 2017 Edition, Litigation Committee of the Intellectual Property Law Association of Chicago, 2017).

As outlined in Tables 1 and 2 above, the parties disagree about whether the five disputed claim terms even need interpretation, which is the starting point for this discussion. Although a *Markman* opinion is not an apt forum for a disquisition on the nature of linguistic epistemology and how meaning gets known, two primary approaches regarding how to determine meaning run through many of the Federal Circuit construction reviews. *See* Craig Allen Nard, *A Theory of Claim Interpretation*, 14 HARV.L.J.TECH. 1, 57 (2000). First, a "hyper-textualist" approach (arising largely from the school of American realism) that the claims and the specification tell the clearest meaning. *Id.* at 44. *Vitronics*, upon which *Phillips* relies, may be considered a strong example of a textualist approach, which more heavily weigh intrinsic evidence. *Id.*

By contrast, a contextualist approach⁴ encourages the use of extrinsic evidence to explain the meaning of terms in the claims and specification as well as what a POSITA understood at the time of filing. *Id.* at 52. *Phillips* not only voices the single note of textualism but also intones that context may contribute usefully to meaning. *Phillips*, 415 F. 3d at 1318 (stating that "expert testimony can be useful for a variety of purposes" including establishing that a particular term has a particular meaning in the pertinent field).

Plaintiffs argued in the *Markman* hearing and their briefs that no claim construction is needed. They assert the claim terms are clear on their face to a POSITA, and therefore no extrinsic evidence to determine meaning is necessary.

At the *Markman* hearing, Defendants argued linguistic clarification of the claims was needed to ensure the jury would not be confused. In their *Markman* briefs (Doc. 264:2 and Doc. 186:8-9), Defendants used extrinsic evidence—expert testimony—to ground their arguments that claim language needed narrowing and a genuine dispute in claim meaning existed. They did not clearly demonstrate ambiguity in the scope of the claims or confusion in the specification that fostered a POSITA's confusion as to meaning. As stated in *Phillips*, "...extrinsic evidence may be useful to the court, but it is unlikely to result in a reliable interpretation of patent claims scope unless considered in the context of the intrinsic evidence." *Phillips*, 415 F. 3d at 1319.

Achieving a more transparent and robust claim construction relies on an exposition (more or less textualist) that disputed terms are clear on their face to a POSITA from the language of the claims

⁴ Based on Ludwig Wittgenstein's linguistic research and theory that word use and context determine meaning. *See* L. Wittgenstein, *Philosophical Investigations* (4th ed. by P. M. S. Hacker and J. Schulte 2009) (original ed. 1953, trans. by G.E.M. Anscombe), Section 43 (stating: "For a *large* class of cases--though not for all--in which we employ the word "meaning" it can be defined thus: the meaning of a word is its use in the language.")

and specification (*Phillips*, 415 F. 3d at 1315-1317) and which flows from an interpretation of intrinsic evidence. From this, *de novo* appellate review follows and with it, the likelihood of reversal. Nonetheless, for the claim terms at issue here, the Court views the intrinsic evidence as more significant and accordingly finds the plain and ordinary meaning of these terms unambiguous to a POSITA and that no claim construction is necessary.

4.1 Relationships among the patents at issue

Before discussing the disputed claim terms, the Court notes that, even though there are 7 patents at issue, there are only two distinct specifications for review. The earliest application filing was for the '436 patent; next was for the '840 patent; and, each of the subsequent 5 filings was either a sister application or a child application to the '840 patent and contained precisely the same specification. Even though not precisely the same, the '436 and the '840 specifications differ primarily as to their drawings and minimally as to their descriptions. To keep the record straight, in reviewing claim terms of the '436 patent, the Court will look to the '436 specification; and for claim terms in the other 6 patents, the Court will refer to the '840 specification.

4.2 “correlate / correlating the first aerial image with the second aerial image”; '436 Patent: Claim 1 and other independent claims

This term, which appears in claim 1, among others, of the '436 patent, was unamended during prosecution and re-examination⁵ and is directed to correlating two different aerial images of a roof, each aerial image showing a different view of the roof. The '436 Patent provides no definition of “correlate”, but, in the '436 Patent, col. 8:23-24, the term “correlation” is described as a step in generating the roof model, which is more or less a product of the recited methods.

The '436 Patent, in describing how the roof model is generated at col. 8:20-55, states that first a point in an aerial image of the roof is marked by an indication and then the same point in another aerial image of the roof is marked by that indication. Thus, from this description, the “correlate” step in claim 1 is done by human input that defines a “corresponding feature” ...“shown in multiple images of the building”. '436 Patent, col. 8:54-56. The specification sufficiently describes “corresponding” as an activity that relates to the “correlate” term in claim 1, especially since there is no other term but “correspond” in the specification that could mean “correlate”. Accordingly, the Court finds the described activity of

⁵ even though other terms in claim 1 were amended.

“corresponding” to convey its meaning to the recited term “correlate” so as to be unambiguous to a POSITA.

Defendants proposed the “correlate” term be defined as “registering a pair of points”, for each reference point used in a roof section. The meaning would then be narrowed such that the pair of points includes a first point identified in the first aerial image and a second point identified in the second aerial image. The Court finds that narrowing this term to “registering a pair of points” substitutes a single embodiment as described in the ‘436 Patent, col. 8:37 to encompass the recited invention. The specification does not necessarily limit the meaning of “correlate” to registering a pair of points. The Court notes, as a practical matter, that the plain and ordinary meaning of the terms “correlate” or “correspond” includes the concept of relating two entities to each other. Nonetheless, the specification does not limit that correlation to only a pair of points, but may be read by a POSITA to include correlations between many different points.

This Court avoids importing limiting embodiments from the specification into the claim and finds the plain and ordinary meaning of the claim term “correlate” in light of the specification would be unambiguous to a POSITA. See *Beacon Adhesives, Inc. v. United States*, 2017 WL 3908205, at *6, (Fed. Cl. 06 Sep 2017) (stating “... although the specification is important in discerning the meaning of the claims, federal trial judges must not ‘import’ or graft limitations from the specification into the claim . . . [additional citation omitted]; *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1340 (Fed. Cir. 2001) (characterizing importing limitations from the specification into the claims as ‘one of the cardinal sins of patent law’); [additional citation omitted]”.

4.3 Pitch Determination Marker: ‘840 Patent: Claims 4, 10-11, 15-16, 18; ‘376 Patent: Claims 17, 19, 20, 23

Table 2 above lists Defendants’ proposed construction for the terms “pitch determination marker” and “envelope tool”.⁶ Underlying this proposed construction is whether the term “displayed model of the roof” is distinct from “pitch determination marker” and from “envelope tool”. Another issue is whether the term “wire frame” is also a “pitch determination marker”.

Defendants argue that, since the terms “pitch determination marker” and “model of the roof” are recited in two different steps of claim 1 of the ‘840 Patent, these terms must be semantically distinct. Their argument stems from the assumption that a recited sequence of claims steps must automatically denote a logical difference between terms recited in different steps. Defendants rely on *Becton Dickinson & Co. v. Tyco Healthcare Grp.*, 616 F.3d 1249, 1254-55 (Fed. Cir. 2010),⁷ which shows that a deeper dive into the specification is warranted before automatically presuming two terms in different

⁶ ‘840 Patent, col. 13: 6-13 denotes the envelope tool as a kind of pitch determination marker.

⁷ For a fuller discussion of *Becton Dickinson*, see below in the section relating to the First and Second Visual Marker terms.

steps must be semantically different. To the point, Defendants' argument fails because of the iterative nature of the recited methods, which is straightforwardly disclosed in the specification.

The relevant claim language is:

"displaying a pitch determination marker...wherein the pitch determination marker is overlaid on the aerial image of the building";

"receiving, based on the displayed pitch determination marker, an indication of the pitch of... one... roof section", and

"modifying a model of the roof based on the received indication of the pitch of ...one roof section".

A POSITA looking at the '840 Patent, Figs. 5A and B and accompanying description (col. 12:45-48) would understand without ambiguity that:

- a pitch determination marker⁸ is an operator-driven interactive control tool that overlies a graphic onto a roof section shown in an aerial image;
- the overlain graphic can serve as an initial model of the roof;
- an operator can move the control tool, which includes a pitch determination marker (element 510, Fig. 5B) to align with the roof pitch in the aerial image; and
- it is this very practice of the operator's moving the pitch determination marker to map onto the image in the aerial photograph that causes the software to modify the model of the roof.

In addition, the '840 Patent, Figs. 5B, 5C and Fig. 5D (which shows the envelope tool embodiment) and accompanying text at col. 12: 40 to 13:48 confirm to a POSITA that it is the very adjustment (by the operator) of a pitch determination marker that causes the operator to "receive" an indication of the pitch and which thereby modifies the model of the roof.

Importantly, that received indication of the pitch may in turn serve as a pitch determination marker, which the operator can iteratively adjust during the Pitch Determination Activity, the Roof Model Construction Activity, and /or The Roof Model Review Activity. Since pitch adjustment by operator's action is an iterative activity, the previous roof model can in effect serve as a new pitch determination marker upon which the operator can act. All of this information is imparted clearly to a POSITA in the specification

Thus, the meaning of the term "pitch determination marker" and of "model of the roof" depends on where in the overall process the operator is acting. Since the '840 Patent unambiguously describes it, a POSITA would understand the iterative and interrelated nature of pitch determination activity, roof model construction activity, and roof model review activity even though such interactivity is not claimed.

⁸ '840 Patent, col. 12: 45-4: "The pitch determination marker 510 (Fig. 5B) is an interactive user interface control that can be directly manipulated by the operator in order to specify the pitch of a section of the building roof 407."

As for whether a wire frame may be a pitch determination marker, the '840 Patent, col. 14:9-13 and Fig 6B clarify that element 610, called a "drawing marker", has the same definition as element 510 in Fig. 5B, termed a "pitch determination marker". Thus, the specification itself denotes equivalence to a POSITA that both elements 510 and 610 are pitch determination markers.

The '840 Patent, col. 14:11-15 further clarifies that an operator uses "pitch determination marker" 610 to trace or outline planar sections of the roof, which use generates wire frame 611 in Fig. 6B corresponding to wire frame 612 in Fig. 6C. Fig. 6D and the '840 Patent, at col. 14:63- 15: 6 states that element 613 is a wire frame representation of a 3-D model of the roof, and then defines the wire frame in essentially the same terms as a pitch determination marker, i.e., an interactive user interface component that can be directly manipulated. This completes the textualist equivalences: pitch determination marker equals wire frame, which equals a 3-D model of the roof and a pitch determination marker.

Since the '840 Patent, col. 13-15 sets forth terms as linguistically equivalent, a POSITA would understand these terms to be semantically equivalent, even if different words were used for the same concept. This is because the specification itself describes the functions of these terms as similar and equivalent. See '840 Patent, col. 14:11-15 and '840 Patent, col. 14:11-15. This equivalence argues against Defendants' proposed insertion of "distinct from the display model of the roof".

Finally, the term "envelope tool" needs no construction inasmuch as its description in the '840 Patent, col. 13: 6-13 and depiction in Fig. 5C plainly conveys a marker that shows two surfaces of the roof. To be precise, the above discussion, although focusing on the '840 specification, applies equally to the '346 Patent, which describes these terms using the same or substantially the same language and Figures.

4.4 First and Second Visual Markers: Distinct from Each Other; and Displayed Roof Model '770 Patent, claim 12 (depending on claim 1)

As Table 2 shows, Defendants' proposed construction raises the issues whether: the first and second visual markers must be distinct from each other, the second visual marker must be distinct from a displayed model of a roof, and the second visual marker must be user-manipulable. Asserted claim 12 is directed to an additional step not recited in claim 1, which performs: "digital wire frame model construction of the roof structure based on the at least one location over the roof structure in the displayed aerial imagery to which the user moved the [at] least one first visual marker."

In asserting the distinctiveness of the first and second visual markers, Defendants rely on language in claim 1,⁹ from which asserted claim 12 depends. They argue that, since claim 1 of the '770

⁹ Claim 1 of the '770 Patent recites:
A computer-implemented process in a roof estimation system comprising:

Patent lists a first and a second visual marker, these markers must be “distinct component[s] of the patented invention” according to *Becton Dickinson & Co. v. Tyco Healthcare Grp.*, 616 F.3d 1249, 1254-55 (Fed. Cir. 2010). Doc. 186:24. In effect, they compare the language of Claim 1 and Claim 12 of the '770 Patent to assert that, since the step of displaying a first marker precedes the step of displaying a second marker, the markers must logically be different. Doc. 186:24. This is a similar argument as presumed in the discussion above relating to pitch determination. Further, they argue, the creation of the roof model must therefore occur after the movement of a first visual marker and be distinct from it since the first visual marker is that “input” element which caused the roof model to be produced. Doc. 186: 23-24; Doc. 264: 17.

The term “marker” is used in describing the different activities that go into generating a roof estimate report. For example, the activity of Image Registration uses “marker controls” or “registration markers” ('840 Patent: col. 9:47-49). The activity of Roof Model Construction uses “pitch determination marker” ('840 Patent: col. 12:30 to 13:49), “drawing marker” ('840 Patent: col. 14: 9-13), and “wire frame” (840 Patent: col. 14: 13-46; col. 14: 63 – col. 15: 6). The activity of Roof Model Review also uses “wire frame” ('840 Patent: col. 15:44-46 and 56-61.

The '770 Patent, claim 1 recites “displaying ...at least one first visual marker ... in a same display window as the first aerial image” and “displaying a location of a second visual marker... in the second aerial image”. This language unambiguously recites that the first and second markers are seen in different aerial images.

However, that these markers are necessarily different does not follow, especially when considering that the '840 Patent, col. 14¹⁰, states:

at 32-34: “Wire frame 612 (in Fig. 6C) **corresponds to wire frame 611** constructed by the operator with reference to FIG. 6B...” and

at 36-38: “**Changes** that the operator makes **to wire frame 611** are **concurrently displayed** by the roof estimation system **as wire frame 612** in image portion 60g”; and

displaying, by the roof estimation system,
a graphical user interface including a first aerial image of a roof structure of a building and **also at least one visual marker that is moveable by a user in a same display window as the first aerial image while said first aerial image is displayed within the graphical user interface;**
moving the first visual marker with respect to the first aerial image of the roof structure to a first location in response to input from the user;
storing data in a memory of the computer of the first location to which the first visual marker was moved;
displaying a second aerial image of the roof structure of the building, the second aerial image providing a different view of the roof than the first aerial image; and
displaying a location of a second visual marker on the roof structure of the building in the second aerial image of the roof structure based on an indication received from the stored data in the memory of the first location on the displayed first aerial image to which the user had moved the first visual marker; and
generating and outputting a roof estimate report using a report generation engine, wherein the roof estimate report includes one or more top plan views of a model of the roof annotated with numerical values for corresponding slope, area, or lengths of the edges of at least some of the plurality of planar roof sections of the model of the roof.

¹⁰ As noted earlier, the specification of the '840 Patent is the same as that of the '770 Patent.

at 39-41: "...if a **new planar roof section is added** by the operator **to wire frame 611**, the new planar roof section is **automatically displayed in wire frame 612 ...**" and at 41-46: "By **concurrently displaying operator identified features in multiple views** of [the roof], the operator obtains feedback regarding ... the accuracy of the ... model generation process, such as image registration and pitch determination" [emphasis added].

This language unmistakably informs a POSITA that the claimed methods may use markers—even though identified by different element numbers—that have the same function of identifying the same portion of the image in different aerial images. The use of such markers occurs throughout the entire method, which includes the major activities set forth in the specification as Image Registration, Roof Model Construction, which includes Pitch Determination, and Roof Model Review.

Addressing Defendants' reliance on *Becton Dickinson*, it must be pointed out that the Federal Circuit's rationale and analysis there, as a whole, undermines the support Defendants presume. Analyzing whether the *Becton Dickinson* hinged arm element was the same as the recited spring means, the Federal Circuit re-iterated that the specification is the single best place to determine claim meaning. *Id.* at 1255, citing *Vitronics*, F.3d at 1152. The *Becton Dickinson* court made extensive review of the relevant specification to point out: 1) the specification definitely confirmed the hinged arm was separate from the spring means (*Becton Dickinson*, 616 F.3d at 1254); and 2) conversely, the specification had no suggestion the hinged arm and the spring means could be the same. (*Id.* at 1255).

Defendants have not provided any review of the '840 Patent specification. Had they done so, they would have had to show that the specification informs a POSITA that a first and second visual marker could be the same elements, as discussed above, and that the frame model may be considered a visual marker that is the end result of an iteration of the entire method, and which may be a starting point marker in a subsequent iteration of the method.

4.5 Second Line Drawing Terms and Responsive Changes

Disputed claim terms appear in Claim 8 (depending on Claim 1) of the '152 Patent, in Claims 26 and 33 of the '454 Patent, and in Claims 1, 8, and 25 of the '737 Patent. See Table 2 above. The disputed terms fall into two categories. One relates to the '770 Patent and involves whether a second line drawing (which bears changes corresponding to changes made to the first line drawing) must be displayed on a second aerial image and must be distinct from the first line drawing. The other relates to the '152 and the '454 Patents and involves whether the claims must recite that operator-made changes to one aerial view are co-occurring or corresponding to changes made by the estimation system in another aerial view.

Plaintiffs argue that Defendants' proposed claim amendments are unsupported by the specification as well as delete claim text necessary for understanding the claim terms. Doc. 268: 30;

Doc. 189:34. Plaintiffs assert these claims need no construction beyond the plain and ordinary meaning of the terms. *Id.*

As with their arguments discussed above relating to the first and second visual markers, Defendants assert that, since the plain language of the claims recite “first” and “second” line drawings, these elements must be distinct. Similar to the findings above, this Court draws support from *Becton Dickinson* to review the specification for semantic distinctiveness of “first line drawing” and “second line drawing”. The relevant sections of the specification include Figs. 6A and 6B and accompanying description at the ‘840 Patent, col. 13:57 to col. 14:23.

Fig. 6A shows two aerial views of the same roof 407, one an east view of the roof (col. 14:6-7), the other a top view (col. 14: 26-27). In each view, a rectangle in perforated lines is drawn over the same portion of the roof; and it is this rectangle that is the recited “line drawing”. In the east view, the portion under the rectangle is described as an “enlarged portion” of a roof and identified as element 608. ‘840 Patent, col. 13:61-64. In the top view, the same portion is also described as an “enlarged portion”, and identified as element 609. The portion of the roof under the rectangles is the same; the format of the line drawing that outlines the portion of the roof under the rectangles is the same; the primary difference between these “enlarged portions” 608 and 609 is only the view of the roof.

A POSITA looking at Fig. 6A would recognize without question that the two images therein are of the same roof, of the same roof portion, outlined in the same way by a perforated rectangle, and appear to be the same line drawing in both views. The specification is silent about whether these two line drawings are separate and distinct. Similar to the findings in *Becton Dickinson*, this Court finds persuasive that Fig. 6A conveys unambiguous information and that the specification lacks a suggestion of two distinct line drawings. Accordingly, Defendants’ addition to the ‘737 Patent claims (See Table 2) is unsupported and therefore ambiguous.

In addition, Defendants’ proposed insertion of another claim term, “[the second line drawing] is displayed on a second aerial image” neither adds clarity to the claim nor removes ambiguity and is therefore equally unsupported. Although the Figures do show line drawings displayed on a second aerial image, importing unnecessary limitations into the claim is improper when that may interfere with the inventor’s goal (See *Phillips*, 415 F.3d at 1316; *Interactive Gift Express v. Compuserve, Inc.*, 256 F.3d 1323, 1333 (Fed. Cir. 2001); *Beacon Adhesives, Inc.*, 2017 WL 3908205 at *6, and especially when the parties are competitors as here.

Defendants’ proposed claim constructions for the “responding changes” claim terms are below, as shown by ~~strikeout~~ and underlining:

For the ‘454 Patent, independent claim 26 (and dependent claim 33), a “changing” step:
... 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 line drawing being made by the computer system in response to the
change that was made by the user in the first line drawing~~

so that the computer system simultaneously displays the changes in both the first line drawing and the second line drawing.

For the '737 Patent, independent claim 1, dependent claims 8 and 25, a "changing" step:

... 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~~
so that the computer system displays the changes in the second line drawing as the user changes the feature on the first line drawing.

For the '152 Patent, claim 8, a displaying step:

... 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 the 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

All of these proposed claim constructions insert a simultaneity into the recited method such that, as a change occurs to a first line drawing (regardless of how made), that change is displayed in the second line drawing. This insertion serves to exclude preferred embodiments. Excluding preferred embodiments may occur when the specification makes clear that the invention is confined in a way not suggested by the claim language, such as by using language that shows the patentee has disclaimed subject matter or limited the scope of the claims. *Computer Docking Station Corp. v. Dell, Inc.*, 519 F.3d 1366, 1374 (Fed. Cir. 2008) (quoting *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1343 (Fed. Cir. 2001).

That kind of concept limiting is not the case here. Defendants' proposed claim constructions insert simultaneity by ignoring the information contained in Fig. 7A and its accompanying description in the '840 Patent, col. 15:20-26. Specifically, Fig. 7A shows four different aerial views of the same roof but only one line drawing 708 and only one wire frame 402. In other words, Fig. 7A shows only a "first" line drawing and wire frame. As the "first" wire frame 402 has been annotated (changed) with roof section pitches, there is no "second" line drawing or "second" wire frame that has been changed in correspondence to changes to the "first" line drawing. A POSITA would understand from Fig. 7A and its accompanying description that the method embodies a variation in which there is only one line drawing and one wire frame displayed, which precludes the need for simultaneous display of a second line

drawing. Thus, Defendants' proposed claim constructions would limit or narrow the scope of the claimed invention without support from the specification.

Defendants' proposed insertions also violate the principle of claim differentiation. See *Phillips*, 415 F.3d at 1315 (citing *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004)) for the presumption that when a dependent claim recites a specific element absent in the independent claim, that element cannot be construed as present in the independent claim. In particular, the '454 Patent, claim 29 recites that the computer system displays changes to the second line drawing in a manner "substantially concurrent" to changes made in the first line drawing. Defendants' proposed claim construction would render Claim 29 potentially invalid for statutory double patenting under 35 U.S.C. 101, and therefore violate the claim differentiation principle.

In addition, Defendants' proposed deletions in the asserted claims of the '454 and '737 Patents are improper. They disregard the inventor's goal of distinguishing the patent over the examiner-cited prior art. Specifically, during the prosecution of the '454 Patent, Plaintiffs' replied in the Office Action dated 20 December 2013 that cited reference U.S. Pat. Pub. No. 2011/0205245 to Kennedy et al. ("Kennedy") did not disclose that the second line drawing was correspondingly changed based on changes made to the first line drawing. Plaintiffs argued that the examiner had even admitted so on page 4 of the Office Action. After this Reply, the '454 claims were allowed. Since the terms in the '454 and '737 Patents are substantially similar, the '454 prosecution history has similar effect over the '757 claims. See *Regents of University of Minnesota v. AGA Medical Corp.* (Fed. Cir. 2013) (demonstrating that, during prosecution of a patent, patentee affirmatively asserted the number of distinct elements meant by a claim term, and the Federal Circuit relied on that assertion in construing claims of a related patent). Thus, Defendants' proposed deletion of "~~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~~" directly negates the prosecution history effect of distinguishing Kennedy and its use in combination with other cited art.

5.0 Conclusion

For the reasons discussed above, the Court finds the plain and ordinary meaning of claim terms listed in Table 2 to be clear and unambiguous to a POSITA, and therefor has not construed these terms.

Dated: 5 December 2017

s/ Robert B. Kugler

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